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THE APPLICATION OF TRADITIONAL ABSTRACT PAINTING IN NEW MEDIA ENVIRONMENTS

Hesham A. Maghrabi

A thesis submitted in partial fulfillment of the Coventry University's requirements for the Degree of Doctor of Philosophy

November 2007

Coventry University
Coventry School of Art and Design

Dedication

My Dad & My Mum

My Wife

My Daughter & My Son

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Abstract

This thesis presents an investigation into the process of new forms of installation art; an exploration of the shifting of artistic activities from conventional studios and fine artist practices to installation art practices. A combined approach was taken whilst undertaking research by studying literature within the field, engaging with other practicing artists and conducting practical analysis. There is also a discussion of new technology in the field of abstract expressionist painting and a dialogue on the differences between traditional and digital abstract painting with regard to their processes.

The reflective and issue finding processes undertaken by the researcher in this investigation are discussed in relation to the changes in his practice. The artist's experimentation with materials and processes and the implications of this as regards the relationship between the artwork and the viewer are also discussed.

The thesis is divided into seven chapters of text and images with an accompanying DVD including the main abstract new media installation. The first chapter includes an introduction to the research with the methodology applied. The second chapter involves using the computer to produce abstract painting. The third chapter then focuses on the differences between digital and traditional abstract painting. Moving on from this the fourth chapter covers multimedia installation and its associated processes. The fifth chapter

deals with the reflections on the practice element of this investigation. The sixth chapter engages with the evaluation of and feedback from the field trip and with notes from artists with regard to practical production. The final chapter draws conclusions from this research with suggestions for further studies.

This thesis will make the following contributions to knowledge: developing the process of animation from 2D abstract painting to a 3D environment with the inclusion of animation; using new technology as a creative tool to enable artists to gain new insights into creative art practices which provide audiences with new experiences of new and multimedia installation; advancing the creative process of new and multimedia artworks taking account of new techniques relating to the manipulation of viewpoints, picture planes and pigment surface as related to traditional methods of image creation and recording and their new media counterparts.

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CHAPTER ONE: INTRODUCTION TO THE THESIS

1.1. Introduction

The twenty-first century is largely dependent on and controlled by technology. It is rare to find an office or school without a computer, and our daily lives function more easily (or often less easily in its absence) with the rapid improvements in technology. The art world has not escaped this development, and new technologies, such as computer painting, aim to improve the work of artists in many ways. The change has led artists to use their imagination to create and interpret their feelings in a new way. Paint programs are interactive and responsive, letting the artist see the painting develop as the strokes are made. This allows art to be brought to a wider audience and in contexts offering a wider range of experience than the traditional art show. Art therefore becomes more relevant to many groups of people. Accordingly then, while technology has been expanding, art as a whole has been placed in the public arena and is being judged by wider audiences than in the past.

Like handmade paintings, computer painting demands skill and ability on the part of the artist. But computer painting requires more effort to achieve success with the medium due to its ongoing development in terms of tools and viewing techniques. Success in using this technique lies not in achieving significance in relation to what is represented, but in relation to other representations. Thus,

creating a digital artwork involves the production in a debate in relation to the medium applied. The success of some artwork depends on the effective use of the material.

This research will spotlight the argument, put forward by the artist's experiments, that the use of developing technology in digital form when related to the creation of abstract painting has potential benefits offered by hybrid techniques involving image creation and observation. Also this investigation will examine the aspects of shifting digital abstract painting from a two dimensional[1] into a three dimensional[2] environment. Moreover, this study will explore new ways to perceive abstract painting through multimedia installation.

Unlike conventional material painting methods, the computer allows the artist to save various developmental stages of an image to return to when needed. Artists are therefore able to see how their work will look before they reach completion of the painting. Accordingly then, the researcher created abstract multimedia installation artwork that enhances the audience understanding of abstract painting and its hidden layers.

This chapter provides an introduction to the overall research described in this thesis. The following sections describe the aims, objectives and the positioning

[1] 2D is a parameter or a measurement required to define the characteristics of an object such as: length and width or shape and size or X and Y and so on.
[2] 3D is like a two dimensional images but added the third character which is depth to an object. It is usually refers to describe a moving objects.

of the research; this is followed by description of the research process, the structure of the thesis and the contribution to knowledge.

1.2. Aims and objectives

The main aim of this research is to create abstract multimedia installation artwork that explores the relationship between sound and colour. The objectives set forth and approved by the Research Degree Committee were followed in order to achieve this aim. These objectives include:

- To exploit the possibilities of new technology for producing abstract art.
- To produce abstract multimedia installation art work.
- To evaluate spectators' reactions and experiences of new media art in general and my own art in particular.

1.3. Positioning of the work

As a fine artist, the researcher's work has been mainly concerned with colour. It is concerned with the Abstract Expressionist concept in particular; the paintings are about personal influences and the way he feels. The main object that the researcher hopes to accomplish in his work is to express his inner feelings by the use of colour placed onto a flat surface. The researcher is trying to create a kind of visual language, letting his audience understand his work based on their own personal experiences.

The researcher created paintings influenced by the hot climate of the country that he comes from, Saudi Arabia, and from the British landscape. In doing this, he used a computer as a tool for his work, which helped him to modify and create new layers over and within his painting. For the researcher, the use of the computer is not the main purpose; rather, it was just a medium. Using this technology is no way saved time because it opened up many possibilities that he wanted to try. And he often did.

The researcher does not follow a set plan when he begins a painting. Sometimes he starts work with the canvas directly, and at other times he starts with digital photos and scans of real objects. Often, he starts with a painting that is scanned and then mixes the digital images with acrylic and/or oil colour. His previous artwork has been strongly influenced by music, with particular regard to Wassily Kandinskys'[3] ideas and paintings, as he considered it possible it make the spiritual visible through abstract forms and colours (Duchting, 2001). Of course, colour is a key aspect of visual art, but throughout history artists have explored the relationship of sound and colour; e.g. Kandinsky, Paul Klee[4] and Jackson Pollock[5] (Ferrier 1988).

According to Jackson Pollock, the interpretation of an abstract work depends on experience and feeling (Francine and Harris, 1983). In addition to the visual, an American artist and illustrator Fred Ludekens (1957) argues that the image in

[3]The most famous Russian abstract artist, 1866- 1944.
[4]A Swiss painter influenced by expressionism, cubism and surrealism, 1879- 1940.
[5]An American abstract expressionist painter, 1912- 1956.

abstract artwork should be ‘heard’ as well as seen. Therefore, one of the researcher’s aims was to produce artwork that combined sound and colour to enhance its emotional and spiritual impact on the audience in order to add more impact and appeal to the artwork.

Frank Popper (1993) has observed that the digital revolution is a kind of transforming of art. New media offers a means of combining sound and colour in ways not previously possible. Consequently, a second objective of this research project was to develop sound and colour pieces by exploiting new technology.

The goal at this stage was to explain the researcher’s creative interests and to document and describe his past work in relation to this project. Prior to this research, the researcher has produced work examining the relationship between the layers of abstract painting and the movement of a tiny camera and viewpoint to involve the audience in the installation.

1.4. Outline of research stages

The process of the present research involves three main stages: (1) Contextualization (2) Creative Production (3) Getting feedback on the work.

1.4.1. Contextualization

The goal at this stage is to gain a deeper understanding of the contextual, theoretical and visual material relevant to the project, exploring two broad lines of investigation:

1.4.1.1. Literature review

This included current and historical studies of the link between abstract painting and digital technology; prior work combining sound and colour; perceptual theories on the integration of the senses; installation art, etc.

1.4.1.2. Analysis of artwork

The focus here rested on contemporary new media and multimedia installation artwork, focusing particularly on the synthesis of colour and sound. Abstract artwork will also be analyzed.

To augment these two steps, semi-structured interviews were undertaken with a selection of Saudi abstract artists, whose work was found to be particularly relevant to the project. This stage of the research investigates how and why some painters move away from conventional artists' tools and on to new technology.

1.4.2. Creative production

This stage of the project involved production of and reflection on artwork itself. Throughout the project the researcher maintained a creative production journal to aid as a reflection tool. He recorded the aims, intentions, work produced, ideas and strategies for redesigning the works, emergent problems and how they were resolved. Ultimately, the journal provided basic reflection material in order to improve and develop his artwork.

1.4.3. Getting feedback on the work

The goal at this stage was to assess the impact of the work produced on the viewers. The researcher observed the audience exploring and responding to his multimedia installation work in order to reflect on their behavior in relation to the aims and intentions of the piece and those of the whole project. He accomplished this by displaying the work and seeking feedback directly from a sample of viewers.

1.5. Organization of the thesis

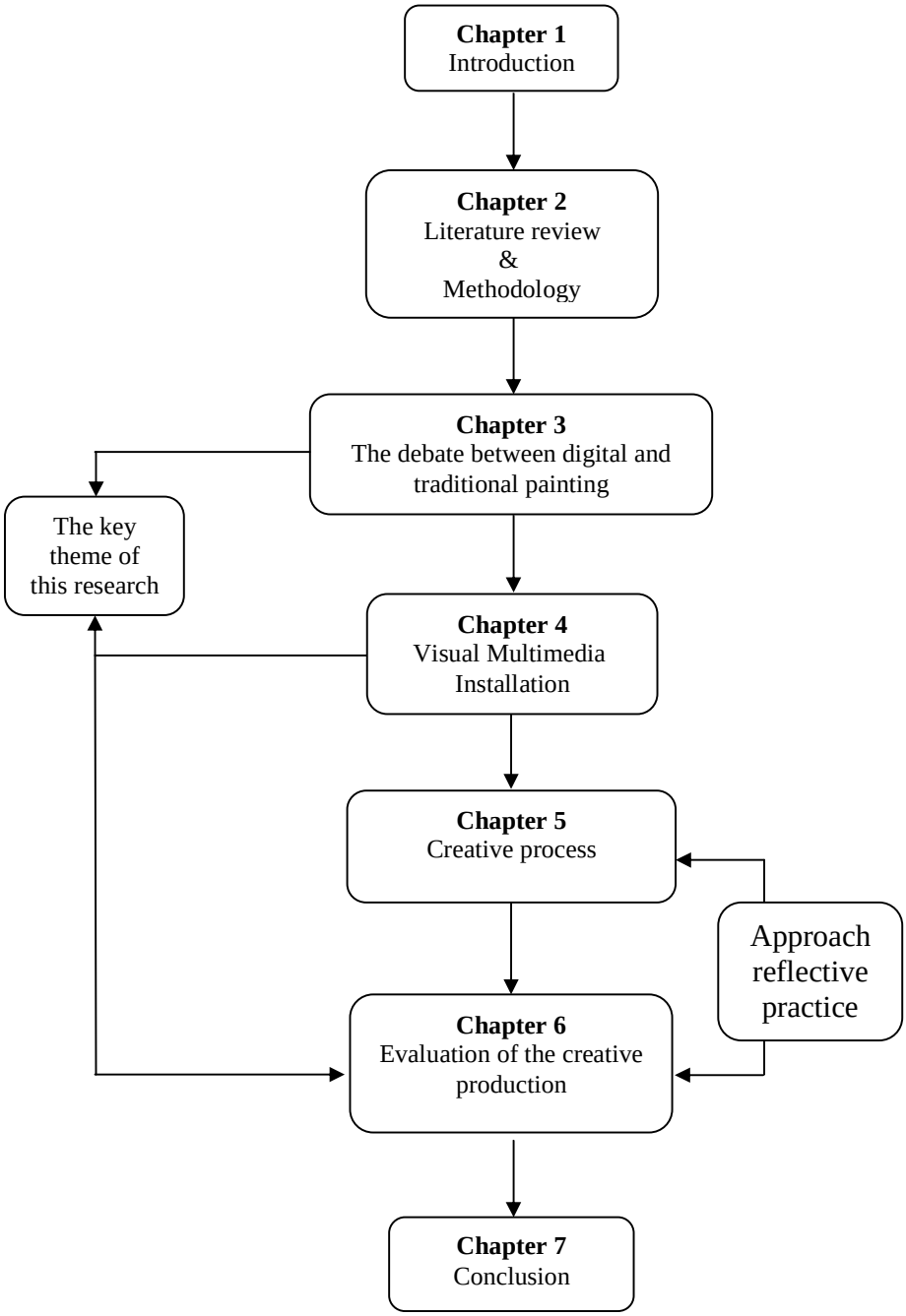

Diagram 1:1
Structure of the thesis

This diagram [1-1] illustrates the thesis structure and reflects its stages. The thesis is divided into several chapters that define, clarify and explain the research project. Chapter two presents the background of the research, previous studies in the field of digital abstract painting and multimedia installation. In addition, it introduces the field study conducted to gain deep understanding of the context in which artists used digital technology in their production. Moreover, this chapter specifies the methodology applied for data collection and reports the major findings.

Chapter three provides the debates, definition and process of digital and traditional abstract painting. Additionally, it investigates the differences between digital and traditional abstract painting with regard to its medium and the advantages of using new technology in visual art. It highlights the difficulties of integrating digital technology into abstract painting. This chapter also spotlights the invisible communication between abstract painting and the viewer's eye, considering the impact on the perception of painting.

In chapter four, a brief history of interactive installation is introduced. Along with this, some examples considering audience interactions with the show are given. Animation and non-tactile interactivity as significant aspects of new technology in visual art are also discussed. In addition, the relationship between sounds with regard to its influence in installation is highlighted.

Chapter five explains the process of the practical production considering personal reflections on each stage. It consists of three main stages: Stage one, presenting sketches and producing abstract painting; stage two, transferring of traditional abstract painting into a digital environment in addition to creating digital paintings; stage three, work in the 3D environment. Finally, animating the 3D abstract digital painting to create an installation.

Chapter six describes and analyses audience feedback throughout the questionnaire, taking into account observations made during the show. These comments are further analysed and conclusions are drawn in chapter seven.

Finally, addressed in the last chapter is this study's contribution to knowledge in the field as well as implications of using new technology for artists. Closing statements outline issues for further research.

1.6. Contribution to knowledge

My compiled research will contribute to knowledge in the field of abstract painting and multimedia installation by doing the following:

- Developing the process of animation from 2D abstract painting to 3D environment, which can provide the audience with a greater understanding of abstract painting.

- Using new technology as a creative tool to enable artists to gain new insights into creative art practice provides audiences with new experiences of multimedia installation.
- Advancing the creative process of multimedia installation. Specifically, the research contributes to such process in the following respects:
    - The process exploits 2D abstract painting as a texture and base structure for 3D objects.
    - The method provides a form of animation, which depends on the camera movements in the 3D environment to involve the audience in the layers behind the final piece of work. Thus, it provides the audience with a greater understanding of abstract painting.
    - The project uses sound as a supporting tool to enhance the audience involvement as a part of the multimedia installation.

1.7. Conclusion

This chapter has introduced the scope of the research. In summary, the research developed a process for creating a non-tactile interactive abstract multimedia installation. It contributes to knowledge by helping abstract artists and audiences understand the process of creating abstract painting and explore the shift from flat surface into a 3 dimensional environment.

Chapter one focused on the overall aims of the research with a plan for the ongoing investigation. The initial contributions to the relative field of knowledge have been clarified as well as the stages of this research.

The following chapter reviews the literature on the integration of digital technology in abstract art and the investigation of the current status of digital abstract art in Saudi Arabia.

CHAPTER TWO: AN INVESTIGATION OF THE USE OF TECHNOLOGY IN ART PRODUCTION

2.1. Introduction

As outlined in Chapter 1, the aim of the research is to create an abstract multimedia installation. In order to exploit fully the possibilities of moving from conventional material to new technology with regard to the creation of an abstract painting that combines sound and colour, related literature was reviewed. An investigation into the inspiration of the Saudi abstract artists in using digital technology is examined, given that the researcher is from Saudi Arabia and that too little is known of these artists. In addition, the process of integrating technology into Saudi artwork is discussed. This is examined by analyzing semi-structured interviews with Saudi Arabian artists and designers at Media City in Dubai.

This chapter reports on two studies:

1. A literature review on the integration of digital technologies with abstract art. An historical review and an overview of the new technology in the field of visual art in relation to the creative process are also investigated. Further, recent studies involving new technology in installation artwork are spotlighted.
2. An interview with Saudi Arabian abstract artists and multimedia designers in Media City at Dubai. This investigation has been realized by

a field trip to both Saudi Arabia as well as Dubai Media City to gain insight into the creative process of using new technology in their productions.

2.2. Methodology

2.2.1. Previous studies

This research draws influence from many areas of traditional and digital artwork. It is difficult to identify why some artists select one medium over another or to identify the way in which artists engage with their materials and processes to produce art works. However, Melina Berkenwald (2002) pointed out that spectators often appreciate that these changes of media or processes are progressive stages in the artist's career. In fact, artists usually displayed the 'finished work' and not their sketches or the stages of the process, which is the logical development of thought. Usually spectators are exploring and viewing the finished look of the painting through the colour and the surface texture of the painting. However, the researcher is fascinated by the stages of the creation process and by the possibilities inherent in showing the sequences of making a painting which give the spectators more insight into the artwork.

Previous studies are largely categorized into different functions: using computers to create painting and using computers to develop traditional painting.

2.2.1.1.Using computers to create painting

Some artists rely solely on computers to produce abstract painting in their entirety. They do not use traditional artists' tools such as canvas or paintbrushes; rather, they use computers and the myriad programs that have developed with the rise of technology. Professor Susan Brandeis (textile artist) and Ellary Schalit, (2004), for example, used Adobe Photoshop and Microsoft Paint among other programs, to produce artwork that is mainly done by computer. They used this software alongside other artists in order to create digital abstract painting or to enhance and adjust the final vision of their artwork. Moreover, some other artists use this technology to focus on the basic forms of the shape to create a specific image.

Similarly, this researcher used the advanced application, Corel Painter 8, to create digital abstract painting with more complex elements to produce abstract painting that yields the same impact as traditional methods of production. The researcher experimented with other software such as Corel Paint Shop Pro, Microsoft Paint and Adobe Photoshop to create his abstract painting.

2.2.1.2. Using computers to develop traditional painting

In this category, artists normally use computers to enhance or adjust their handmade paintings or sketches. Here, artists use computers as tools to enhance abstract painting. A Hungarian graphic designer, Judith Barath (2003), for instance, uses the computer to finalize the final image of her painting by adding some effects onto the layers and so to come up with a new vision. Similarly, an American landscape and digital artist, Martha Bradford (2003) also uses the computer to improve artwork that has been produced primarily with conventional materials. They often use computers to scan the images and to rearrange the colour or the size of their work. Other artists, such as the British artist, Fiona Rae[6] builds combinations of colours into the computer and works on them individually. She manipulates the picture and adds brushstrokes to her artworks to achieve her final perspective (Kent, 1997).

2.2.1.3. Shifting 2D painting into 3D environment

Artists have also used technology to shift their artwork into different planes. Computers here are used as tools to transform the surface from the 2D picture plane to the 3D environment. A computer application called CavePainting, For instance, is an artistic medium that uses a 3D analogue of 2D brush strokes to create 3D works of art in a fully immersive Cave environment. It gives the artist

[6] A British painter who was born in 1963 in Hong Kong and moved to the United Kingdom in 1970. Rae is a member of Young British Artists (a group of conceptual artists, painters, sculptors and installation artists based in the United Kingdom). She is considered as an abstract artist and she uses computer aids to adjust and manipulate her paintings.

the freedom to stand up and walk around during production; he or she has control over colour and a large, varied set of brush strokes with which to work. This investigation, called “CavePainting: A Fully Immersive 3D Artistic Medium and Interactive Experience”, was carried out in 2001by Daniel Keefe, Joseph La Viola, Tomer Moscovich, Daniel Feliz and David Laidlaw. CavePainter aspires to convey the impression of a 3D scene by building up an oil painting with layers of varied brush strokes. Moreover, creators of the program support the idea that art created by this dynamic tool should be viewed in an interactive 3D display environment.

Julie Daily and Kenneth Kiss investigate 3D art in their “3D Painting Program for Painting in a New Dimension” (1995). Their research proposed that digital artists give full attention to their productions instead of to the mechanics and artifacts of technology. Daily and Kiss invented a digital 3D paint program which provides the foundation for making 3D tools as natural to use as 2D. In addition, 2D digital painting patterns, such as brushes, layers, and masks, were extended into 3 dimensions without adding complexity to the interface.

Computer applications were used to support the researcher’s production and to shift his 2D flat painting into 3D. The whole artworks as done by the researcher in the 3D environment were originally created as 2D paint strokes on a flat surface. More details about this transformation from 2D to the 3D environment will be discussed in the creative production chapter.

2.2.1.4. Create model to make abstract painting

In their research paper “MultiCam: A System for Interactive Rendering of Abstract Digital Images” (2004), Jeffery Smith and Ergun Akleman present an artist’s tool to design abstract painting. This system was designed with a simple, interactive and intuitive rendering technique. The viewing areas are initially divided into a grid with a unique view of the object, of randomly jittered and overlapping view ports. When combined, these views form a composite view of the object, which has been hardware-rendered from many cameras. Different camera positions can be controlled by the artist, which enables him/her to enhance his/er skills to create unique abstract images. Adjusting the 3D space, background colour, texture, warmth and coldness of the light depends on the resolution and the screen appearance. In this production each scene can be viewed as separate image individually whereas the researchers’ images are linked together and cannot be seen individually. The researcher’s artwork production is created to be seen as one piece and will lose its function if divided into sections or parts.

In 2004, William Baxter promoted the work of digital artists who use digital brushes and paints that similarly mimic those of real ones. In his research “Physically-Based Modeling Techniques for Interactive Digital Painting”, Baxter presents a novel, physically-based approach to digital painting, he introduces several specific modeling techniques. The first is a physically-based, 3D, deformable, virtual brush model based on non-linear quasi-static constrained

energy minimization (Baxter, 2004). He also uses three different models to capture the dynamic behaviour of viscous paint media, each offering a different trade-off between speed and fidelity from 2D heuristics, to 3D partial differential equations. In this research the haptic technique was applied by letting the response interact with the digital brushes. This study experimented by manipulating the eight samples of colours provided in the rendering technique of real time.

2.2.1.5. Shifting abstract painting to animation

The purpose of this stage was to use computers to animate the abstract painting: to generate animation that can be created by using a camera and adding sound. Some artists use new technology to move around the painting and create animation. However, like the researcher, other artists used 3D studio Max and such programs to move the camera within the painting to show the details of the images and explore the hidden layers that comprise the whole picture. The differences as the researcher discovered, lay in the generation of the original image. Other artists had used programs to create the visual scenes with the internal camera layouts already in mind. The researcher created first the abstract painting as viewed from a traditional viewpoint. Internal exploration was generated at a later stage to add further experience.

Adding sound can also be critical. Sound has a strong relationship with painting that, as previously mentioned, dates back to Kandinsky and Klee. Some artists

used sound as a visualization element for their artwork production while others use it as a supplement to animation to enhance the viewers' interaction with the artwork. The researcher used sound with his production to add more invisible surrounding effects to the audience experience.

2.2.2. Interviews with Arabic abstract artists

2.2.2.1. Aims and objectives

The primary aim of this part of the research is to understand the current status of digital art in Saudi Arabia. It is also an investigation into the latest technology that designers are currently using in their production of multimedia animation. This aim can be broken down into the following categories: 1. To clarify the artists' inspiration and purpose in using digital technologies; 2. To understand the Saudi audience perception and conception of digital abstract art; and 3. To understand the advanced technology that designers are using in their work. The researcher met fifteen Saudi Arabian painters, ten Saudi digital artists as well as ten designers from Media city in Dubai and interviewed them in order to explore these aims and the latest developments in digital equipment that can be applied to the visual arts.

2.2.2.2. Method

The interview is a skill in categorizing and controlling a dialogue, which is designed for a specific purpose. Keats pointed out that the interview is a

controlled situation between *"one person to one, one person to more than one"* (Keats, 2000. P72). It is a kind of individual response and face-to-face interaction that gives the participant the freedom to express his/er opinion.

According to Abu- Risha *"the qualitative researcher can look, listen and learn about the subject and the aims to find the similar or the different, within the things being looked at."* (Abu-Risha, 1999. P119). In most recent research, interviewing people is considered as a key method of data collection (Berry, 1999). It is one of the most universal techniques for collecting data in qualitative research and is used across all disciplines. Given that at the aim at this stage was to see what artists create, to gather information, to monitor process and to come up with unexpected findings, interviewing became a vital means of research. Furthermore, in terms of the diversity and differences of creating artwork, the qualitative research method was found to be the most appropriate method to collect data.

Moreover, employing the interview for research purposes is more appropriate in many situations including: to know what people are thinking, to explore the reason and motivation for the attitudes and opinions of people, to know the artists' feelings towards their work and to reiterate difficult-to-express concepts and emotions. Interviewing further forms a dynamic relationship between both the interviewer and the respondent, and the artist is more open to sharing his/her reaction and attitudes towards his/her artwork, rather than modifying the

relationship towards the works. Thus, the semi-structured interview method was the most appropriate strategy in this research; artists opened up and talked freely about their artwork.

Rawlings (1991) agrees that in this type of interview, both the interviewer and interviewee are more related to each other in a more interactive, natural and dynamic way. This leads to a probing, deep and revealing conversation: *"they [unstructured/ semi-structures' interviews] enable the researcher to collect data which is far less contaminated by the interviewer's assumptions and presuppositions; the respondents are able to put their stories across in their own way, and can choose how to tell them. In that way, unstructured interviews are considered to have a high degree of validity" (*Rawlings, 1991. P58).

The initial intention of the interview in this research was to collect more information and to gain a deeper understanding of the topic. The semi-structured interview technique persuades respondents to expand on their answers in a relaxed and informal environment. Also this method lets the interviewer focus deeply on various aspects of the area of interest and can give direct information that s/he feels to be more significant and relevant to the topic. Although a large amount of information can be obtained from the interview transcript and subsequent feedback, a small number of respondents have been selected because they can provide so much detail in this type of interview.

2.2.2.3. Participants

A field trip was made to interview some traditional abstract artists and digital artists in Saudi Arabia. Also the researcher visited Media City in Dubai for the data collection about the latest developments in using new technology in multimedia installation.

2.2.2.4. The elements of interview

Each interview has an aim according to the researcher's point of view. The interviewee helps to achieve the interviewer's purpose. In between, the interviewer has to ensure that the goal will be achieved effectively. There are three main elements in an interview:

- The opening element: dealing with the introduction of the purpose of the interview and the method that is going to be used during the interview while obtaining background information about the interviewee.
- The focusing element: the topic must focus on one particular subject and the interviewer has greater flexibility to be more precise using his/er skills.
- The closing element: this is the last step of the interview, therefore, it has to be finished by developing a good feeling that both interviewer and respondent have participated in a topic that has been valuable.

2.2.2.5. The questions

Each interview was comprised of a unique and a guiding set of questions that provided structure for analyses. The questions were largely designed to explore and to find out the changes in art production over recent years. A set of free-format questions was used to enable the conversation to be more efficiently structured during the data collection stage. This structure also eased tension and gave the artists a more informal atmosphere in which to speak. Questions were phrased to open up significant information related to this research. For example, the interviewer asked indirect question to the artists to let him/her speak about their artwork and give him/her the freedom to explain and interpret his/her work in whichever way he or she likes. These questions were often framed using 'what, where, how, why' in order to make analysis as simple as possible.

The interview questions were initially started as a list of 15 questions. As the interview commenced, the number grew to 27 questions in some interviews. The list was modified over the course of time because many questions proved not to address the research aims and needed to be changed in order to be constructive. For example, direct questions confused the painters and did not lead to any answers that aided the research. They were therefore dropped from the list and replaced by other indirect questions, which provided answers in more finite detail. This flexibility was necessary and limited unwanted intrusion on behalf of the interviewee. Generally speaking, all contributions in this investigation are considered as true findings.

2.2.2.6. Data analysis

Qualitative research explores issues, seeks to understand phenomenon and answer questions. It engages in active and demanding analytic processes throughout all phases of the research. The interviews in this research were semi-structured, as described earlier in this chapter. Post-interview, conversations were transferred from notes and recordings into script form. Answers between artists were then compared to trace similarities and differences in their answers.

Each artist's paintings were then examined, which opened up a discussion with questions relating to the results of the first step of this method. The artists then added further feedback themselves, and others, such as art critics and journalists, were consulted as well. This feedback was crosschecked to see if it related in any way to what the artist said about their work. In addition, all respondents' artwork and answers have been looked at and divided into categories according to the stage they were at, the question of the data collection stage itself provided a structure for data analysis and helped with the recognition of emergent categories.

2.2.2.7. Results

The researcher found that Saudi abstract artists mainly use digital technologies to explore and examine new technology as a tool for their artwork. However, some Saudi abstract artists use this technology just to reproduce their previous artwork. But other Saudi abstract artists also use technological tools to adjust or

enhance their artwork. Regardless, the process and the techniques applied by these artists are relatively basic, and it can be assumed that they are in the early stages of producing computer-powered artwork. Interviewed artists in this study are using programs such as Adobe Photoshop or other applications, such as Corel Draw, to enhance the resolution of the picture, rather than using these and other more complex and appropriate software that is designed to actually produce digital painting.

Audiences have had limited exposure to digital exhibitions in Saudi Arabia. Perceptions and conceptions towards digital abstract art are therefore affected by this lack of contact with it, and as mechanical production increases, audiences and artists alike will witness a huge shift in understanding and appreciating digital abstract art. An exhibition by Khalid Alameer, a digital Saudi artist, in 2004 was considered as a digital exhibition. Most of the artworks produced were digital paintings. From the researcher's observation and individual conversation with the audiences it can assumed that this show was perceived as being not successful by the majority. This is due to the relatively low quality of the printed images. Also this may be because of the lack of experience and awareness on the part of the audiences with respect to how to accept digital painting as created by artists working on computers. As noticed by the researcher, in Saudi Arabia it is rare to have digital art exhibitions. There is present a perception that the 'input' of the machine may detract influence or actually remove from the artist the creative and practice-based skills involved in painting.

Interviews with designers in Dubai did not greatly help this investigation because much of the information required was not accessible due to confidential projects and undisclosed information about clients. Research and information gathered from Saudi artists was therefore deemed more reliable, as more information was disclosed, and artists were able to speak candidly.

Furthermore, data collected through interviews changed some of the researcher's personal thoughts on using computers in art production. As this project continued, more advanced and complex software was used to produce digital artwork, which will be discussed in more detail in chapter five of this thesis. Without the influence of the artists and designers interviewed, this technology may not have been used in the same way.

2.3. Some problems with analyzing qualitative data

Collecting many interview transcripts and asking a variety of questions makes analyzing qualitative interview data one of the most essential problems in researching (Rawlings, 1991). A stack of papers can often become overwhelming, frustrating and boring to evaluate.

In spite of the fact that the data collected in the interviews was triangulated to add validity to the research; people do not always tell the truth, and it is necessary to take this into account (Shepley, 2000). As previously mentioned,

one major problem in collecting and analyzing data was encountered when interviewing graphic designers in Dubai. Due to company regulations, vital information aiding this research could not be shared.

Further issues were encountered in conducting the interviews. Artists often talked about their work, discussing unrelated topics than those addressed by the interviewer. These answers were challenging to classify, as many topics were discussed and expanded on.

This became even more challenging when dealing with time constraints as well. Many artists did not have the opportunity to disclose all aspects of their techniques in such a short period of time. This led them to talk in brief to discuss other aspects of their work, data collection became even more challenging.

2.4. The changes of the aims as a result of the research

Due to the diverse approaches of this investigation, the project was more difficult than originally anticipated. To accommodate this, the core aims of the initial research had to be expanded and modified. The research found that most Saudi artists were drawn to areas of technology that imitated other digital artists' artworks.

Consequently, they were moving away from certain traditional forms of making art towards new practices. Throughout the research, respondents focused on the final appearance of their artwork rather than on the process of creation. They were also anxious about accepting artwork produced by computers, which signifies some reluctance in terms of a full acceptance of technology.

It was noticed by the researcher that a detailed exploration of the processes of making and producing installation art work were seen as significant suitable research areas.

2.5. Summary

This chapter has focused on the method of collecting data for this research project. It also highlights previous related studies with regard to computer integration in the field of creating abstract painting and its purpose.

Moreover, this chapter has demonstrated how the interview method was applied in this investigation and the problems that arose because of it. This changed the outcome of the project, and due to confidential reasons, information and materials used in the Media City of Dubai were not disclosed. This created a great deal of focus on abstract painters from Saudi Arabia.

The next chapter will keep these ideas in mind and further discuss the relationship between traditional and digital painting, highlighting the value of handmade production in the mechanical era.

CHAPTER THREE: DIGITAL AND TRADITIONAL PAINTING

3.1. Introduction

We live in a technological age; a progressive era in which technology has come to be seen as an indivisible part of our work, social and creative lives. The arts have been redefined by discovery and technological invention, from systems of visualization and representation to whole new media, from perspective drawings, to photography to digital representation and creation. Artists have created a new craft centred around this technology, which has given rise to new visions, new vocabulary and a fascinating perspective. These influences have given artists the freedom to interpret their ideas using a much wider variety of tools than their predecessors from any other previous age.

This chapter focuses on and discusses these ideas and is divided into three sections. In section one, traditional and digital artworks are defined. Section two discusses the involvement of new technology as a medium in visual art production, and section three debates the potential advantages of digital painting production processes in comparison with traditional painting processes.

3.2. Definition

For centuries, painters have used different media and tools to express their thoughts and feelings. The aesthetics of a painterly work and the manipulation of materials paint medium, brushes, knives, palettes, and supports like canvas and wood blocks are closely related. The skills needed to manipulate these materials often have a direct effect on the finished work. Thus, some painters were fascinated by applying mixed materials with their resultant colour to create texture and effects on the artwork. For example, Spanish painter Pablo Picasso (1881- 1973) used newspapers and wallpaper in some of his paintings. The reason for using these real life materials was to merge the media together coming up with a new vision and adding more argument into the artwork: *"Real-life materials were thought to better represent "reality" for making art because they are closely connected to daily life. Picasso and future artists found the collage process liberating; it suggests new and infinite possibilities of what art can be. There is a sense of compelling immediacy to collage"* (Grisham, 2001).

3.2.1. Traditional art

The Collin Cobuild Dictionary defines the term 'traditional' as: "*Traditional customs, beliefs, or methods are ones that have existed for a long time without changing"* (Sinclair, Fox, et al, 2000. P1776). Paula Barclay expands on this

definition when she notes: *"Traditional art' refers to skilled painting, sculpture and printmaking but not to conceptual art using modern media or ready-made objects and any or none of the aforementioned media"* (Barclay, 2001).

Moreover, the researcher believes that traditional art refers to the work of art that is created by conventional methods of painting using basic materials such as oil colour, acrylic colour, easel, canvas and so on.

3.2.2. Digital art

Originally, the computer display screen had been a specialized device designed to transmit internally held information to scientists, doctors, navigators etc. The data portrayed had highly specialized and unique characteristics. However, the tools delivering such graphical data had significant potential for the manipulation of colours, shapes and text, and it was not long before such devices came to the attention of artists and designers. Within the two decades following the late 1970s, an inversion of sorts took place in that, whilst the personal computer proliferated to become available for everyone to own, in many cases the image portrayal on screen became more important than the data that underpinned it.

The term 'digital', has been broadly defined as: *"systems record or transmit information in the form of thousands of very small signals, in contrast to*

analogue format" (Sinclair, Fox, et al, 2000. P458). Based on this definition, digital art refers mainly to art which has been created on a computer in digital format. It is usually created to resize the scale of the image as well as to identify the geometric shape of the picture. Moreover, digital art can be generated by using other tools, such as scanners or pin tablets. For example, scanned photographs, mouse drawn paintings or graphics tablets have been considered as types of digital art (Bucci, 2005). Also, the term 'digital' refers to the infinite variation of possibilities for creating products without loss of validity.

Furthermore, digital always related to the terms of technology. Therefore, both digital and technology often refer to the mechanical, electronic or digital forms. Thus, nowadays, our own built environment is part of this revolution. Frequently overlooked however definitions of technology as process (Randolph, 1991) are.

3.3. Digital painting vs. traditional painting

The mechanical, electronic and digital computer, as derived from Babbage's calculating machines, entered into the world of graphical representation as early as the 1950's and 1960's. In dealing with and processing large amounts of information, the computer programs strove to build structures of data to describe many financial, geographical, physical and other situations. It became a requirement that the programs present huge amounts of information in a

meaningful sense to human beings, and with this in mind, the concept of the computer peripheral developed.

The computer peripheral is a device for portraying large amounts of data in a readily accessible format. As research suggests, human beings take in, very quickly, up to 80% of their information through vision. It is therefore evident that the peripherals would use visual displays. Some of these displays initially took mark-on-paper form, which soon developed into display screens, or vision display unites (VDUs), as they were once termed.

The arts have absorbed advances and discoveries in the scientific and technological fields. These advances and discoveries have pertained to the science of seeing, of the depiction of what we may see in terms of drawing, visualization, perspective rendering, depth cueing, mechanical projections, photography and the shifting of viewpoints over time.

Technology and science are working in parallel to persuade artists to involve themselves in the productions of the new technology. Artists have always been fascinated by new scientific and technological developments that have continued apace with artistic practice and allowed for the improvement and expansion of creative endeavors in many and various fields. Such developments have provided artists with constantly developing toolsets that have been invented in the search for new forms of artistic expression.

Development of new techniques often precipitates something of a quantum leap in terms of the development of science, technology and artistic method and practice. Photography, as employed in the late 19th and early 20th centuries, allowed for the recording and measuring of natural and scientific phenomena in new ways. These new methods brought physical, mechanical and chemical processes to bear on subjects that had previously either not been depicted or which had relied heavily on the perceptive, cognitive and crafting skills of artists. The shadow forms created by sunlight as it moved across a courtyard, the bending of light as it passed by huge centers of gravity, the observation of extremely small particles of matter and the viewing of peoples, fauna, animal life and landscapes from very remote regions became possible via the interaction of light, physical material and chemical reactions.

Previously, the depiction of such material had relied almost exclusively on the hand, eye and brain coordination of artists, illustrators and draughts persons who applied their skills in conveying, for specialist and general audiences, the pictorial attributes of discoveries in science and natural history. Whilst artists, illustrators and designers had applied their skills and ideas to these depictions in support of the scientific community, they had also used them for fine art and expressive work that had addressed a more personal and spiritual expression of their response to the world and their lives within it. Almost simultaneously with the new photographic depictions of scientific, technical and natural history

subject matter, these developing techniques were applied to the more personal, expressive and artistic statements of artists.

Abstract painting often refers to art that does not depict any object in the real world, rather it includes colour, forms and texture. It contains and portrays inner feelings and emotions rather than simply conveying an external look (Bannister, 2007). By using shape, line and form abstract artists try to create their abstract paintings which hope to reveal their vision about the real world. The most important element for abstract expressionist artists is the surface. For example, Jackson Pollock, Mark Rothko, Willem de Kooning considered their large canvases as a significant element of the success of the artwork. Accident and chance are important elements of this movement because there are no mistakes that can occur throughout the creation process.

With traditional painting artists are able to give their attention to their physical engagement during the creation process. This involvement by the artists' hands and body, in some cases, led the artists to achieve a level of unconscious activity whilst working. This full engagement with the materials and the process can express the artist's emotions via visual communication.

Moreover, the physical interaction between artist and his material engages the artist to use all of his/her abilities and skills to interpret his/her feeling from the point of view. Each time he or she engages in a creative act a traditional artist

learns a new technique or skill to develop the artwork. It is a kind of continuous experiment. Whereas, the materials of new technology can be seen as commands which can be stored in the computer and used when needed. There is no such practice or development for any skills. Thus, the researcher pointed out that while working with new technology the speed of production of an artwork is improved rather than the required skills. Painting with digital materials as developed by the researcher brought about new experiences which were often saved onto the computer to be reused in the future.

3.3.1. Technical advantages of new technology in art

The ongoing development of the computer during the 1980s and 1990s as a creative tool that allowed for the manipulation of on-screen images with ever increasing speed, colour range and subtlety, was largely driven by its inclusion within the toolsets of the design industries. Indeed, it is true to say that the more that such technology could provide, the more was demanded; something of an industrial revolution occurred within the industry that still resonates today. With this, the computer-aided artist of the 21st century opens him/herself up to new possibilities and choices. Due to the continuous exploration and development of computer potential, artists have gained new exciting ways to express their ideas and themselves (Barclay, 2001).

There are several advantages to using computers as the new technology in creating digital art. These advantages can be divided into three main sections: technical advantages, the artist's feeling of freedom, exploration and enjoyment and finally, the exploration process.

The following sections highlight some aspects of the new technology and the advantages that can be gained by using this tool.

3.3.1.1. Speed

According to Susan Brandeis (2004), using digital technology makes it possible to produce more ideas in a shorter period of time thus producing works faster. It seems too easy to create work that appears to have taken hours to create (if achieved by traditional painting) and the amount of talent and skill needed for it can be minimal (Barclay, 2001).

For this reason, there are perceptions, both in the West and in the Middle East, that creative work as carried out on the computer is not only questionable in terms of originality but also in terms in commitment, aesthetics and effort (Barclay, 2001). A popular conception is held that large-scale changes and effects can be added to a work with minimal effort by choosing from an array of stored effects. This has profound consequences for artists working in such a manner. For example, to paint a large surface with colours takes such a long

time using traditional methods whereas with a computer graphical tool it is possible to cover a broad space in a very short period of time.

3.3.1.2. Visual possibilities

Digital technology allows artists to produce images that are virtually impossible to create by hand, thus expanding the access and range of possibilities. Douglas Bucci (2005) argues that these technologies allow people to imagine what could be tangible and to create the objects of dreams, desires and visions, if only on a screen. Artists can envision what does not exist, and this allows for future innovation. Painting using traditional methods can also do this as the visualizations of architects' renders have done previously with traditional tools and more lately with digital tools. Rush agrees that :"*The artist's ability to effortlessly reposition and combine images, filters and colours with the friction-less and gravity-free memory space of the computer, endows them an image-making freedom never before imagined"* (Rush, 1999. P168).

3.3.1.3. Modification

Rick Poynor (2005) notices that, compared to the drawing board, cutting mat and actual desktop, the surface on which design is now created is not really a surface at all: *"It was more like a window-a window that looked on to nowhere. The ability to keep remixing and refining the screen image was seen as an advantage, and doubtless it was in many ways. But it led to a profound disconnection, fostering the illusion that the universe behind the screen was*

more vital, perfect, full of possibility, and relevant to contemporary reality and experience than anything achieved with non-digital methods" (Poynor, 2005. P33-34).

This is one of the significant advantages of using the computer to produce artwork. It is the endless remixing and redefining of the final appearance of the image before it can be displayed, projected or printed and fixed onto the wall. This tool has made it easier to modify and manipulate the painting until it meets the artist's requirements.

3.3.1.4. Storage and accessibility

Digital work in progress can be stored on disk or transferred via the internet to any location for further work. This flexibility allows artists to work from almost anywhere, whereas traditional artists are restricted to specific places, spaces and times in which to work.

These significant characteristics provoked the researcher to use such new technology in the creation of his artwork because it suggested that it may satisfy his needs. Digital paintings look rich in colour even when stored on a disk for a very long time. The software that is used gives the production of the artwork a real-life sensation. This was an intended outcome and expectation of the research project.

These aspects of the assumed possibilities and perceptions regarding computer based painting, and in particular the perception of the work having been done mainly by the machine, is one of the things that the researcher set out to explore.

3.3.2. Artist perception of digital creation process vs. traditional

3.3.2.1. Pleasure of traditional painting versus exploration in digital painting

According to Gogarty (2004), as the artist practices painting and develops his skills, the artwork production also improves. This process values the handmade and places it at the heart of much of practice; traditional methods of painting on canvas allow a certain creative freedom. Visualizing and imagining the final appearance of the traditional painting depends on the experience and knowledge of materials and processes. This interaction of disciplines enables artists to imagine their production beyond the dominant frame. The relationships between the skilled hand and a culture's ability to express itself have been considered as a kind of conclusion, which conceptualizes the combination of personal and collective experience.

Traditional abstract painting has few rules regarding starting and finishing. A blank canvas can be approached from the bottom, top or middle. Thus, the artist has the power to control the whole image from contrasting angles. Artists, such as Jackson Pollock, agreed that painting with colour directly onto canvas led the

artist to feel more attached and enabled him/her to walk and view the painting from different perspectives to create his/her artwork (Harrison and Wood, 1992).

In order for painting to be successful then, the artist has to become a part of the painting and engage with the creation process. To be a part of the painting means to have understood and explored the potential of colour, texture and canvas and to envision final outcomes. These aspects relate mainly to viewpoints and the relationship between the viewpoint and the surface of the picture. This research project has also explored these points and gathered opinions from artists and designers in the UK and Middle East; this will be addressed in the fifth chapter.

As regards the conventional materials adopted by most of the fine art audiences, searching for the abstract artist's emotions and feeling is more important through his/her colour and surface texture. However, with the digital technique, the materials and process applied gain prominence. On the other hand, using large canvases or adding new materials to traditional painting also will address questions about the media used.

Some artists prefer not to use technology in their work because of its precise limitations. Since artists do not work directly with canvas, they do not become a part of the picture, and the closeness to the surface of the painting is missing. Some painters have therefore found that using technology in visual art is not

particularly satisfying. Susan Brandeis (2004), a handmade textiles artist, points out that although new technology is quick, in some cases it can also be irritating; her imagination works faster and quicker than computer applications. She uses technology minimally, and the use of technology in her artwork production is virtually invisible to the viewer. Brandeis means to express her thoughts and this technology is only a tool in creating a finished product and is not an end in itself.

But traditional art also has its drawbacks. With no 'undo' function in handmade production, artwork is risky and unpredictable, which might make it fail in some way. "Undo" is one of the most significant elements in computer art since it helps artists to adjust and manipulate their paintings while working in layers and in stages. Without this command, a painting may well have to be discarded as failing, and irretrievable, in terms of delicacy. Rebecca Strzelec, a designer working with digital technology, suggests:"*the risk proposition is completely altered for her by the digital medium. The ability to take risks while creating new work is something I would never allow myself to fully experience while at the traditional bench....More importantly, I always felt that working traditionally meant that once the piece was begun there was very little room for exploration"* (Strzelec, 2004. P4).

With the surge in technology, the investigation and exploration for new artistic materials will continue indefinitely. However, as Poynor (2005) points out, it is

difficult to compare any traditional medium with digital art and its intense, unique and sensorial marks. Human imagination is still awed by the latest innovations in the field of art, whereas handmade drawings and scripts have been a direct response to the formulaic effects of using the digital materials.

Moreover, the freedom to explore the details of a painting and to have full control over a work of art at any stage, is one of the most significant keys to this digital medium. Unlike traditional painting, digital painting makes it possible to control everything at once and view it more deeply before displaying the work elsewhere.

3.3.2.2. Digital painting visualization

One of the main differences between digital and traditional painting is the visualization of the final appearance. Traditional paintings cannot be completely visualized until they are almost entirely constructed. However, traditional artists investigate and experiment whilst they are working on their art. The final result is considered as a function or a documentation of the artist's process and work.

Conversely, with new technology, the processes followed by artists can be consistently retained and viewed. With computers, the interaction between concept and construct allows an idea to be conceived, constructed, and viewed on a screen before the object is made tangible. Digital artists have the freedom to view, change, manipulate and enhance their images on the screen before they go

beyond the screen. Colours can be changed and modified a hundred times in a short period of time.

The use of computer technology in art also enables artists to work in each layer separately without causing any effect on the rest of the painting. Martha Bradford [7] (2003) discusses how working in layers gives the artist unlimited freedom to add or delete any colour or line without messing up any other shape or form. Using this method of painting means that it is possible to save an accomplished segment before making a change. This characteristic enables artists to be expressive by giving them more options when they are drawing and painting with a tablet and the computer. They are allowed to create the whole painting on the computer and to build up the composition of the layers. These layers can be organized and constructed until the production of the final painting is agreed.

Bob Anderson[8] (2004) claims, *"I can work very rapidly with multiple layers, and get to decisions that wouldn't have been possible without the computer"* (An interview with the artist). He notes how moving from a traditional method of painting to the new technology is a kind of challenge, which places the artist in a different world. The transformation from traditional to digital equipment allows Anderson to work in each sequence of the production individually. The researcher assumed that it could be difficult to search for the hidden potential

[7] Martha Bradford is a digital artist who has strong views about this relatively new concept of using computer and software as a traditional tool to create amazingly realistic artwork.
8 Liquitex, 50th Anniversary Artist Interview, 2004

element of digital material and merge it with other media to give the same appearance as traditional paintings. Thus, more research in this area needs to be carried out, which may not be simple.

Working with the digital painting's layers is as significant a feature as the 'undo' function, which would be impossible to have with traditional method. This technique has drawn the researcher's attention to the question of when a digital painting is finished. As digital artists have the freedom to rework and access their painting's layers, is it possible to consider the digital painting as a finished piece? From the researcher's point of view a digital abstract painting once printed out and exhibited somewhere will be considered a finished painting. More about painting's layers will be discussed in the next chapter.

3.3.3. Audience perception of traditional versus digital abstract painting

"Different kinds of making may provide different kinds of understanding" (Dormer, 1997. P436). What is remarkable about digital painting is that most viewers want to investigate the process of the creation before exploring the painting itself. Evidence for this thought will be presented in chapter six. This reaction puts digital artwork at the centre of a wide-ranging debate, which appears to add value to this kind of art. Viewers often try to investigate digitally produced paintings in depth and compare them with traditional paintings to see whether there are any differences.

When viewing abstract painting, they are often tempted to look for objects where none exist; therefore, it is more challenging to create an abstract painting that has meaning. Abstract painters usually paint their pictures from feelings and emotions which made it difficult to understand the meaning behind the images in the painting without an explanation from the artist his/herself.

3.4. Difficulties of integrating digital technology in art

3.4.1. Technical difficulties

Artists who refuse to accept the integration of digital technology in their work refer mainly to technical problems that they may encounter. However, Judith Barath (2003) writes that when she starts a digital painting, she begins a full emotional engagement and forgets all about the technical concerns. She notices that the connection between her imagination and the screen allows her to create her artwork. However, working digitally demands higher levels of alertness in order to control all features of the computer. This technology requires alertness, as users are required to use both hands in order to process commands. Artists with limited skills within the technology they are using are often challenged to understand how they can enhance their artwork. Without technology training, they often become frustrated and lost.

3.4.2. Digital technology produces non-humanized work

Other artists support the idea that the computer cannot do all the things that the human hand can do. Hand techniques provide a counterbalance, a humanizing feel, a correlation to tradition and a conduit for the self, alongside, and in conjunction with, the use of computer techniques. Some fear that humanity has been removed from the creative process. But the computer is merely a machine that cannot function without the artist's skills: *"We need to completely re-evaluate 'computer art'. The term presently refers to the making of art with the help of a computer, the art to be enjoyed by human observers. The artist is the one who makes the creative choices"* (Lev Manovich, 1994. P62).

Therefore, artists should not avoid embracing computers because they can further artistic output in many ways, and humans are completely in control of this technology. Those who argue against the use of digital art are missing the point; computers are tools in the creation of artistic impressions, controlled by the hands of talented and creative artists.

3.4.3. Colour calibration

Colour calibration is another issue that can deter painters from using computers in the production of their artwork. It is difficult to match colours seen on the computer screen with colours that are printed on canvas, or any other materials,

without a series of colour tests. According to the various developments for computer screen, artists are sometimes frustrated when they print their images on the surface to be displayed onto the wall. The variation between colours on the true-bright screen with colour on a surface is quite often notable. Artists see colour on the computer screen as very clear and the light coming from the back of the monitor changes the hue of the colours.

The computer monitor projects the light from the back of the screen where the colour is displayed. Therefore, computer artists are controlling and adjusting the luminance contrasts and colour purities according to their significant degree. But this control will be lost with the printed images which may impact on the artists' decisions and thoughts. As the researcher pointed out from his practice with digital technology, the reflected light from the computer screen is one of the most important aspects that the artists need to be aware of.

Although computer applications offer an artist massive possibilities of colour palette without the difficulty of mixing colours to obtain the right one, it is difficult, sometimes, to pick out the right colour without testing the palette many times. The computer often offers a different type of colour, however, it is not about getting a fine-looking image but about how satisfied artists are with the final appearance. Thus, while the computer opens endless possibilities of colour hue and contrast, control of a specific palette within the computer in some cases is more difficult than when working by hand.

With traditional methods of painting, artists can control the light's angles and project to the precise point to reflect the colour through light. Light in this technique goes towards the surface of the painting in the same direction as the human eye. However, with the computer screen the light reflects on the human eyes through colour (Metcalf, 1997).

Illustration artist Dani Jones (2007) further notices that due to the flatness of computer screen colour, digital art loses its handmade authentic look and appearance. Artists lack the ability to touch, feel and smell the real colour and medium. Making a mess and touching the actual colour while painting, allows the artist to express him/herself and become more attached to the work. This is a kind of a full interaction with the colour and the surface, and digital art completely lacks this interaction at this moment.

3.5. New technology as a new medium in art

In 1987, the pioneer of Computer-Aided-Design Stanley Lechtzin stated: *"Countless artists are utilizing the technologies of the past and are proving that there are always new insights and discoveries to be made even while exploring what superficially may appear to be well-charted territory. Some of us, however, choose to work with the technology of our own generation and become as familiar with it as with the traditional ones. This becomes the means through which the contemporary artist may create aesthetic values and realize new*

possibilities for artistic expression. If we wish to speak to and about our time, is there a better medium to use than the technology developed by this highly industrialized society?" (Lechtzin, 2005).

Lechtzin believed that our generation has been controlled by technology as a medium nowadays and it is obvious that this medium has had great impact on our lives. Moreover, due to the ongoing industrial development of this technology this medium has merged significantly with our art production technologies and has facilitated and prompted remarkable achievement.

Professor of Materials Science and Engineering, Rohit Trivedi writes in Materials in Art and Technology: *"The history of materials is a testament to human creativity and innovation. It is a documentation of how human beings interacted with their environment to develop resources, discover new materials and design technologies to create and build their world. The impact of materials on ancient societies was so important that archaeologists classified this progress into technological stages: the Stone Age, the Bronze Age and the Iron Age"* (Trivedi, 1998. P34-41).

Trivedi assumed that technology is a kind of successful development of our materials that artists have developed further to create their artwork with unconventional materials. This revolution of technology is created by the sequences of technical improvement up to, and including, our recent decade.

The term '*medium*' has been interpreted as: *"a substance or material which is used for a particular purpose or in order to produce a particular effect"* (Sinclair, Fox, et al, 2000. P1036). William Baxter further argues that each medium used in painting particularly reflects its own inherent characteristics (Lin, Baxter and Scheif, 2004). This sense of "medium" is defined by significant "engagement": a new set of tools, materials, processes, and an environment that affords the means for conceptualization and manifestation.

In *Abstracting Craft: The Practiced Digital Hand,* Malcolm McCullough suggests that: *"When we speak of richness, difficulty, or versatility, we are not only referring to the discipline of our practice, or the quality of our tools, but also to the very medium in which we work. In the sense of the word that means a pervasive context, these are the properties of a medium that surrounds us"* (McCullough, 1996. P196).

In addition, subjugating the new technology for our purposes can further successful production. Some digital artists show that integrating new technology with art elevates the medium and generates new ideas which humanity can build upon. The flexibility of the computer makes this tool a great medium for creating art. It has its own palette and toolsets from watercolour to acrylic or oils. This allows the artist to create anything in any way he/she can imagine. The significant part of this theory is that while the medium continues to change, the artist remains the same (Grant and Vysniauskas, 2004): *"This is a new medium.*

To use it without resort to another medium is an inquiry into what it has to offer, not to use it as a servant to make what we already know" (Lechtzin, 2005).

Digital printing is now widespread in art production in visual art in particular and in the field of art in general. In most of the museums and galleries, digital production is seen as an acceptable medium of creation and presentation. Moreover, Susan Sontag (2000) remarked that our perception can be changed according to the new technology which can be considered as a kind of adjusting tool to understand the new productions in the art field.

The flexibility of moving back and forth through the steps of a process, and the continual interaction between process and product is unique to digital design. It is as though that layer of the work remains open for ongoing visualization and adjustment. This is another advantage of using the computer in painting that the artist is able to rework in his painting as many times as he/she wants. The artist can change or add details to his/her painting even after exhibiting the artwork, whereas in traditional painting it is more difficult after varnishing the images to make any changes.

3.6. Methods of integrating new technology in artworks

The pictorial and graphical qualities of drawing, painting, still photography and moving photography migrated over a relatively short time, in about twenty

years, to become necessary components of the computer screen. Whilst photography originated as a method of recording the world, it rapidly moved on to become a means of expression. A similar situation arose in computing. A large amount of descriptive data was originally organized in pictorial and graphical manner for the purpose of communication to human beings. But computers have now become tools to give expression to human ideas, concepts and aesthetics.

By applying different media in digital artwork, artists are able to establish a new form of production. Current exploration and practices in digital art are recognized as pertaining to at least two distinct categories: the medium-specific and the non-medium-specific. Thus, all new tools that are applied to art production change both the way we work and the object itself.

American artist Dorothy Simpson Krause uses the word '*Tradigital'* to describe works that build a link between traditional and digital worlds. New digital technological tools and traditional materials work in parallel to improve expressiveness and to liberate art from the digital output flatness (Barclay, 2001).

3.6.1. Computer as a painting tool

There are two methods of integrating computer technology into the creation process of painting; computers can be used as both painting and processing tools. Many artists use computers every day as supporting tools that help them improve and record the developmental stages of their work. Strzelec suggests that digital equipment is the workspace for her artwork in particular (Strzelec, 2004).

Moreover, other artists save time sketching, searching, and exploring with this medium. For example, Judith Barath uses Adobe Illustrator to make her sketches and then imports them into Abode Photoshop in order to create the initial form and colour. Later she combines various filters to create the effects she wants (Barath, 2003).

Furthermore, as Michael Rush points out: *"One of the main differences between computer art and traditional art is the possibility of deleting a line or of replacing and distorting photographs. But how different is this from the eraser for a pencil or of cut-and-paste collage? It is slower and less clean but the act of doing so is a form of editing and isn't the computer as a tool an extension of that? "Where the artist might apply paint to canvas or clay to armature, computer crafts people simply pour information into the computer's memory bank, making their medium the computer's memory*" (Rush, 1999. P168).

Rush suggests that the computer in some cases can be used as note-book or sketch book that can store and record any action that the artist might use and require later in his/her artwork. It can delete or replace any elements with others and save all steps in the memory that may be reused in the future.

David Cohen argues that British artist Fiona Rae uses the computer as a tool to build combinations of abstract colours and then tries to work in each colour separately. Rae adjusts the layers and the shape of the picture by adding brush strokes until she has achieved her final vision. She uses Adobe Photoshop to explore the colours and to manipulate the special effects that she creates. Cohen argues that Rae has attempted to become involved in the connection between the self-consciousnesses of the brushstroke and its energy (Cohen, 2000).

Similarly to Rae's work, this research project involved new technology in its production by using tools such as brushes, colours and palettes, among others. An abstract painting was created that would otherwise have been made using traditional painting materials. This medium saved time and created fresh pictures, which can look as good as paintings created in a traditional manner.

3.6.2. Computer as a processing tool

"It's a processing tool, kind of like a whirring mixer" (Belsie 1995). As artists Laurent Belsie suggests, many artists use computers as tools for modifying

traditional artwork. Ellary Schalit, an artist who works out of her barn in New York, imports her photographs from old postcards into her computer via her scanner and then recolours and resizes the images until she achieves her desired effects. Later, she uses these images printed out from her computer as sketches for the large canvases she paints: *"Previously, I worked with my camera and sketches,"* she says. *"This just opens up a whole new set of possibilities"* (Schalit, 2003).

Others artists, such as American illustrator Caty Bartholomew, work the other way around. She begins with sketches and paints and then moves on to the computer (Rush, 1999). Thus, the computer is used as a tool that can manipulate the artist's production and rearrange the scale of the balance of the colours to enhance the appearance of images.

3.7. Summary

Technology and digital information have evolved into a medium that has redefined the arts, both in the practice and in the production of countless disciplines, including graphic design, photography, architecture, industrial design, jewellery and so on.

This chapter has focused on the handmade value of traditional abstract painting in relation to new technology in the field. It has explored the advantages and

disadvantages of using new technology to produce artwork. Moreover, this chapter has demonstrated the reasons why artists integrate new technology into their works. This examination and evaluation have changed the ideas of the researcher, and this will be reflected in future artwork.

Being open to interpretation is one of the overriding characteristics of abstract painting. The artist expresses emotion and influence without being bound to the real world. The abstract artist can propose simply his expression of an emotion towards his surrounding environment. An audience who is viewing an abstract painting can imagine many things. Thus, the title of the artwork would help the audience to speculate the meaning behind colour and surface.

With both traditional and digital abstract painting, audiences begin speculating what the piece means and what the artist is trying to capture. The audience then begins to speculate what the artwork means to him or her, and to think about the emotions that he/she is feeling.

Similarly to traditional abstract painting, digital artists create their artwork with emotion and feeling through the engagement of unconsciousness. Digital art production requires a highly skilled artist to understand the potential of the medium and to express his/her inner feeling.

The next chapter will cover the new media installation and the process of creating an animation from flat surface.

CHAPTER FOUR: VISUAL MULTIMEDIA INSTALLATION

4.1. Introduction

Unlike painting and sculpture, installation art has fewer limitations in complex physical presences. It involves the viewer in complex and varied ways with being part of the artwork. This full interaction seems attractively placed to stimulate ideological and aesthetic dialogues[9] (Davies, Onorato, ed, 1997). Moreover, installation art is often a work of art that usually consists of extending space. The art sometimes depends on perceptions more than the object itself, which might be site-specific, interactive or environmental.

The following chapter will clarify the term multimedia installation and its interaction with the audience. It will also investigate the developing of 2D images into 3D animation and the associated process and include a brief overview of installation in the field of visual art. As indicated in the previous chapter, audience involvement and interaction plays an important role in the success of an artwork. However, some installation works consist of a variety of components such as: light, sound, electronic materials and so on. To understand the meaning of these combinations audiences required, in some cases, a physical interaction or emotional reaction to gain a full understanding of and insight into the show.

[9] A dialogue between San Jose and Barbara Lee Williams, 2000

Installation artists, nowadays, consider the significance of an experience as within a complex and expanding field rather than as the direct meeting of viewers and a work of art in the specific atmosphere of the gallery. Recently, most contemporary artists are more interested in the creation process than the object, and view the interaction between the viewer and the work of art that occurs in an encounter as a set of stimuli. This is quite a challenging aspect because installation artists involve an engaging of the audiences in the complex physical and non-physical presence.

4.2. Installation art

4.2.1. Definitions

Installation, in its most basic form, is the act of installing something, and according to Collin Cobuild Dictionary, John Sinclair has been interpreted as *"a place that contains equipment and machinery which are being used for a particular purpose"* (Sinclair, 2000. P874). In the *Oxford Dictionary of Art and Artists*, Ian Chilvers has interpreted the term as, *"an assemblage or environment constructed in the gallery specifically for a particular exhibition"* (Chilvers, 1990. P259). Ely (2004) further argues that the term 'installation art' is often referred to in relation to a "new art form"[10]. She argues that installation elements deal with two aspects. Firstly, the conceptualization of spatiality, that considers

[10] Bonita Ely in her article "The Ancient History of Installation Art" 2004.

its disciplines as architecture, sculpture, music and dance. Secondly, installation has the intersection and interaction of the disciplines with each other.

With regard to the use of physical sources in installation art, this can be described as *"anything the artist wants to do when given a room in which to work, a definition that deliberately creates a broad swath of possibilities"* (Rosenthal, 2003. P65). Thus, installation artists evoke their audiences in an interrelationship with the work of art by adding more support elements to their artworks. These elements could be sound, light real time and other features. Moreover, installation artists integrate physical involvement with architectural elements, and the experience emerges significantly in the interpretation of the artwork.

Installation artworks, though often made as site-specific works which are based on the aesthetic experience, have the ability to project the viewer beyond the boundaries of a given space. This cannot be fully described, depicted, recorded or explained and the artists let the viewer explore these boundaries. Thus, the viewer acts as catalyst and receptor to explore the work of art.

There is a strong relationship between the work and the place, between the viewer and the work, the work and the space, and the space and the viewer. Installation art breaks down the traditional barrier between the viewer and the work of art by integrating the characteristics of the physical space into the

artworks. It gives a new definition of the oldest tradition in art; that it was made directly on a wall. Thus, by separating time and space, art as such does not exist.

An American art historian, Julie Reiss agrees when she notes: *"In looking at a lot of work in the sixties, I found myself disturbed by the fact that I could arbitrarily start looking at a work from any point of view. In my work I wanted to confront the spectators directly and draw them in physically to discover space with their bodies"* (Reiss, 1999. P48).

Reiss is herself drawn into the full engagement of the audience with the work of art as in being part of the whole composition. This interrelation could be achieved by physical or emotion interaction. Reiss points out that installation art consists of elements that should be available when audiences are trying to present it.

The most important element is the viewer: *"the essence of installation art is spectator participation,"* (Reiss, 1999. P89). Spectator participation plays a significant function in giving sense to the artwork. If the spectators were in any way limited in exploring the installation art, this would lead to a lack of interaction. This can only be damaging to what installation art sets out to do. Some galleries limit the interaction between installations and spectators and thus give viewers weak perspectives of the work. But some artists view this

limitation as empowering. They have the power to control the way people see their work and adjust the objects according to personal concerns. Robert Irwin, for example, in his artwork 'Untitled' in 1969 [figure 4:1] controls the light that is separated from acrylic discs and the shadow effect the lights create at the center of the work. Irwin tries to control the context of this work to force the viewer to perceive them from a single dominant vantage point. In addition, he blurs the perceptual boundaries between object and space (Davies, and Onorato, 1997).

When viewing this installation [figure 4:1], viewers react through visual observation and meet challenges most particularly about the viewer's expectations of materials and conventions: *"Perception and action occur in a time continuum. Most actions alter the visual and tactile field sufficiently to make new judgment possible…Action (or behavior) is the only medium that I have to confront and judge my mind's decision"* (Baden, Undated. P3-4).

Installation artists involve their audiences and draw their attention to the interesting point of view. In fact no two viewers encounter the art in the same way *"It is interesting, too, to see two very different responses to the same space"* (Klein, 1958. P37). Some installation artists consider that the viewer's perceptual journey through space is the focus of all artistic decision that has led the viewer to be the center of the artist's interest. Thus, the viewers' visual experiences and physical appearance are equally important in understanding installation art that requires physical interaction with the space, and site-specific

installations which demand physical and perceptual engagement in order to achieve a high level of knowledge regarding the environment.

Installation artist Jennifer Steinkamp creates her own language in her work 'Stiffs Installation' [figure 4:2] in 2000. This language investigates illusions that transform the viewer's perception of actual space into a synthesis of the real and the virtual: :"*One of my greatest challenges is to create a work where complex ideas can be best experienced as works of art"* Steinkamp said (Steinkamp, 2001. P109-112). Steinkamp's work engages the viewers' attention by using lumen projection reflections on the monolith. That is, the viewer sees both the light moving onto the column as well as the shadow, as the light comes from behind the viewers.

Installation art often relies upon computer based technology due to its origins. Moreover, in Steinkamp's work and that of many other installation artists, installation art seems to be engaging with adept new technology. Artworks can be established in a way that has never been experienced before and which is sometimes very tempting for both the artist and his audience

4.2.2. The roots of installation art

The beginning of installation art can be traced back to the second half of the 19th century. Installation art had a direct impact on the International Surrealist

Exhibition held in London in 1936 and in Paris in 1938. Richard Wagner[11], for instance, created *Gesamtkunstwerk* (Total work of art, late 1840s), which is an operatic performance that encompasses music, theatre and the visual arts and which shows a synthesis[12] of sensory impressions that overwhelms the viewer. Wagner created his own atmospheric elements, such as a darkened theatre, sound effects and seating arrangements, which focused the attention of the audience on the stage, thus completely immersing them in the imaginary world of the music drama. 'Total work of art' is defined as the complete integration of art, architecture, music, poetry and drama. This work represents not only a combination of various techniques, media, and academic disciplines, but also a conceptualization of art as a means for dialogue with the viewer. These concepts were revolutionary at the time, but they have since come to be taken for granted in the modern environment of operatic performance (Azari, 2002).

In 1958 Yves Klein[13], a nouveau realist artist, presented one of the earliest installations called "The Void". It was a presentation of the empty white interior of a commercial gallery. Klein sought to infuse his works with elements drawn from the world and give them new spiritual significance. Later that year, the American painter Allan Kaprow[14] used the term 'environment' to describe his

11Wilhelm Wagner (1813 –1883) German composer, conductor, music theorist.
12 The term "synthesis" is commonly understood to be an integration of two or more pre-existing elements which results in a new creation. In addition "synthesis of the arts," is commonly used to describe any integration of multiple art forms.
13 A French artist (1928-1962) and known as one of the most important artist in post-war European art.
14 An American painter (1927-2006) known as a pioneer of performance art.

room-sized multimedia works. But the term “installation art” was not used until much later (Klein, 1958).

In the early 1960s the term ‘installation’ referred to nothing more than how an exhibition had been hung. It was considered as a construction for a specific interior that was often intended for a temporary period. The artist invited the viewer literally to enter into the work of art in order to demand active engagement of touch, hearing and smell. By 1970, shifting terminology emerged and phrases such as ‘project art’ and ‘temporary art’ began to circulate. Regardless, early forms of installation art collaborated with movements of the 60s and 70s such as: Pop Art, Realism, Minimalism and Conceptual Art.

With the discarded items found in the streets of New York City, American installation artists started to present their work. In 1960, Claes Oldenburg’s[15] “The Street” and Jim Dine’s[16] “The House” involved the viewer in the physical atmosphere as a total experience to develop the realm of art. Oldenburg housed his installation “The Store” in a rented shop in New York City for two months in 1961. This space functioned as both a studio and a commercial gallery, as a source of creation and a retail outlet. Alan Kaprow also showed his installation, “Words” in 1961 [figure 4:3], at the Smolin Gallery in New York City in that year. Kaprow’s work consisted of various sheets and rolls of paper combining random arrangements of words with music played by several musicians,

[15] A Swedish sculptor born in 1929 and well known for his public art.
[16] An American Pop artist born in 1935.

prompting the viewer to walk right through this apparently disorganized mixture (Kaprow, 1961).

Other installation artists also began to emerge around this time and helped to further modify viewers' perceptions of art. American minimalist installation artist Dan Flavin[17], for instance, in his 'Untitled' light installation in 1973 [figure 4:4] changed audience perception of interior spaces through the precise placement of fluorescent light tubes of different colours: *"One might not think of light as a matter of fact, but I do. And it is, as I said, as plain and open and direct an art as you will ever find"* (Flavin, 1987). In addition, this work, as well as some of Flavin's others, have been credited with helping to start the minimalist movement in 1963.

Therefore, installation art was now assumed to be a complete body rather than a gathering of objects. It became the chosen form of art for artists working outside of conventional materials. Edward Kienholz[18], an American Pop artist, created a piece called "The Beanery" in 1965. Kienholz constructed an environment of real places through which the viewer could walk and explore the artwork from inside.

[17] An American artist (1933- 1996) known for using fluorescent light in his sculpture and installation.
[18] An American installation artist (1927- 1994).

In 1966 the American painter and filmmaker, Andy Warhol[19], emerged on the art scene and produced two split installations: “Silver Clouds”, which consisted of a of a room containing only silver-coloured helium-filled pillow shapes and Warhol’s “Cow Wallpaper” which covered the other wall of the Leo Castelli Gallery. This installation showed how Warhol removed himself from his work and renounced traditional painting to embed the new materials in his works. In addition, between 1966 and 1967 Warhol created a series of multimedia events which featured a musical performance by The Velvet Underground (American rock band) and Nico (German singer) which was called ‘Exploring plastic inevitable’. This event showed Warhol’s film about dance and performance. The result of these compositions comprising dance, music and film was a shifting of complex sound tones with the phenomenological interaction of audience and sound. The viewers experienced the artwork by its attracting their attentiveness and their perceptual engagement with the work of art.

In 1978 Richard Jackson, an American artist born in 1939, used his canvas more structurally and displayed a 30 x 19 foot diamond-shaped canvas above the floor at an oblique angle and pushed a freshly painted rectangular canvas with primary colour over it (Jackson, 1998). In doing this, he demonstrated that his installation consisted of half architecture and half abstract painting (Rubinstein,

[19] An American artist born in 1928 and a very well known Pop artist. His early career was that of commercial illustrator, Campbell’s soup cans. And after that became a filmmaker, record producer and author. Warhol worked with various media such as painting, photography, drawing, sculpture and silk screen. He died in 1987.

2005). This brings to mind the American abstract expressionist Jackson Pollock's paintings. He used a similar technique and a similar sense of freedom to express his ideas about contemporary art. Pollock was concerned about the process of making: "*the thing that is wrong with the painting process is that it is an editing process, you make ten paintings and have an exhibition showing the best five. My work doesn't edit anything, it's evidence of a work performed, of a process"* (Blake, 2001. P196).

Jeffrey Shaw[20], pioneered the use of interactivity and virtuality in his many art installations and produced his first interactive installation in 1983 called "Point of View". In this artwork, Shaw calls upon the physical involvement of the viewer. This consists of sounds and images that can be controlled by an audience: *"It is the particular audio visual journey made by a spectator who operates the joystick which constitutes a 'performance' of this work. For the other spectators that performance becomes 'theater'"* (Shaw, 1991. P24-26).

With the development of the electronic and digital technologies in the late 20th and 21st centuries, installation art improved apace allowing the viewer to immerse themselves in spatiality and the extension of the body. This development in art form has led visual artists to address the relationship of figure to ground, object to spatiality.

[20] An Australian media artist born in 1944.

By and large, in the 20th century the visual artist has shifted focus from the dominance of the 'figure', or object, to the 'ground' and the spatial characteristics that all modernist art practices. Barbra Hepworth[21] and Ola Cohn[22] believe that installation art has shifted the viewer's attention away from the material object as the focus of interpretation towards the spatial. This alteration of conceptualized spatiality has totally transformed the glossary of art practice.

Ann Stoddard, an American artist, noticed that she has moved towards installation art to explore the potential of her artwork. This helped her to overcome limitations of the frame of painting and focus on the spatial element of the work atmosphere: *"I wanted to work in the space of the viewer, to make* art *that existed in the space between life and* art, *a shared space that included the viewer and time"* (Chalifour, 2004. P10-11).

Thus, installation artists created their artwork to be widely accessible to a diverse audience. Moreover, some of the art criticisms explored the relation between culture and nature. Other artists such as Jennifer Steinkamp and Jim Isermann[23] investigated space and time with regard to the human body. With the complex of interrelationship between space, time and interpretation of life other

[21] A great British sculptor in the twentieth century (1903- 1975).
[22] An Australian sculpture artist (1892- 1964).
[23] Born in Wisconsin, 1955. Using conventional household materials such as plywood, fabric, glass, paint and so on to explore the abstraction and design throughout his installation.

artists such as: Eleanor Antin[24], Allan Kaprow and Erika Rothenberg[25], have brought their innovation and insights into art installation.

4.3. Interactive installation art

With regard to the widespread nature of art and the different ways of making art, there is an interest in trying to understand the complexities of the processes that take place between the viewer and the perception of the artwork. This section aims to explore the strength of installations in integrating the audience into the artwork. Viewer emotive participation interactivity, is one of the features that motivates the researcher to use digital technologies in the produced artwork.

The digital medium exhibits distinguishing characteristics, which are often used in varying combinations. Digital art is often interactive, allowing forms of navigating, assembling and contributing to artwork beyond the extent of merely experiencing it. The medium has challenged traditional notions of artwork, audience and artist. Developments in the artist's medium suggest that most installation artists shifted their attention from the art object to the post-object conditions of possibility and a fluid interaction between different manifestations of information.

[24] An American performance artist, film maker and installation artist born in 1935.
[25] An American artist born in 1950.

In art installation the artist usually evokes the sensorial experience of the viewers. The creation of this interactivity can engage the viewer by using various elements such as sound, touch and light. *"Our new century is becoming increasingly infused by odours that mark a cultural transition into a digital culture"* Margaret Morse said in Sensational Technologies (Dekker and Saaze, 2004). Morse and other artists tried to produce artwork that evokes the sensations of the viewers. They are trying to explore the synaesthetic[26] reaction of the viewers. Annet Dekker and Vivian van Saaze (2004) pointed out that both emotion and body reaction engross the viewers in the sight of light, sound, texture and so on.

4.3.1. Value of interactive art

"The artistic experience, however, has long been contemplative. A painting that we can look at carefully and at length offers diverse interpretations according to moments, years, centuries. The artistic relationship between a viewer and an artwork exists within, mentally. The artwork (its interpretation) evolves, changes (invisibly) under the gaze of the viewer; in fact it changes the gaze of the viewer: the viewer changes within through the artistic experience" (Le Meur, 2002. P204-209).

[26] Synaesthesia is used to describe the interaction between two senses or more which normally function separately, for example, between hearing and listening sensations.

Since the 1960s, artists and art theorists have been particularly interested in audience participation. They have paid special attention to interactive artworks that can transform viewers into participants using the medium of the time. The traditional art forms of text, painting and sculpture, among others, have synthesized together creating interactive media by technology support. New technology added more complicity to the artistic materials and facilitated the interaction between both audience and materials or the artwork itself. Thus, collaboration between technologies and artists frequently creates new forms of interaction and visualization.

Nowadays, the invention of the CD-ROM[27] and the DVD[28] alongside the World Wide Web allowed the incorporation of 2D and 3D graphics, movies, animations, text and sound into new locations and widely available outputs. An added tool to this mix has redefined the notion of artistic experience-user interaction, the users' power of choice to co-create a digital artwork within artist-defined parameters.

Although interactive art is critically acknowledged and documented, multiplicity has accompanied its definition (Reichardt, 1971; Popper, 1993; Lovejoy, 1996). Ptacek (1994) indicates that in interactive art, by manipulating the artwork, viewers are allowed to experience it by direct exploration. Thus, the long-sought

[27] This is an abbreviation of Compact Disc read-only memory, which usually includes music, photo or data that can be accessed by computer.
[28] This is an abbreviation of Digital Video Disc which contains media files and data storage and is also run by computer.

goal can be achieved by increasing viewer participation. The “Total Artwork” concept of 1840, an unrealized dream of many nineteenth-century artists, became an important art form at last; viewers were able to experience such art works not as mere observers, but as active participants, who could interact with compositions of art to alter the character of what they experienced.

In the attempt to give meaning to interactive art, Le Meur (2002) argues that more value is generally granted to the viewer’s reaction to the artwork than to contemplation of the work. Viewers are thought to be more present in relationship to the artwork because they can “manipulate” or “literally” transform it by using interfaces; the viewer can finish the work, take part in its realization and become its co-author. The observation of images and the questions of representation disappear, driven away by the power of action possessed by the user. Moreover, Edmonds, Tuner and Candy argue that the appearance of the artwork has a great impact on the viewer to interact with the object performance (Edmonds, Tuner and Candy, 2004).

Interactivity is defined by Peacock (2001) as experiences mediated by and including computer systems that take in physical world actions, and give out display in visual, sonic and haptic sensory domains, singly or in combination. The term “interactive art” is used in this thesis to include any form of interaction that takes place between the artwork and the viewer; in particular, the visual interaction. Due to the development of digital technology in the field of art, the

opportunities to include audience participation have increased (Edmonds, Tuner and Candy, 2004). In addition, visual interactivity towards artwork is no longer limited to physical interaction alone. Interactive installation allows the artist to build on what has already been achieved and also to fulfill expectations of new development.

Lynn Hershman, regarded as the most influential female artist of new media, considers that with interactivity it is possible to change the passive reception of the viewer into an active one (Hershman, 1993). The use of the new technology deals with the viewer directly and involves the audience in a dialogue to think and explore the artwork depending on the viewer's experience. Soke Dinkla (1994), a German art historian and new media critic, remarks that interactive art allows the viewer to intervene in the action in relation to the work of art. Today, most artists involve technology in their artwork production rather than standing outside of the new technologically advanced society.

In the late 1960s and early 1970s, American Interactive artists such as Ken Feingold, Perry Hoberman, Lynn Hershman-Leeson and Karl Sims designed their installations with the purpose of encouraging viewers to create their own narrative or association with their interactive work of art (Hershman, 1993). In doing this, they established a new task for artists who would like to evaluate their art. Thus, interactive installation has become more dynamic and broken barriers in terms of the limitations between artist and viewer.

In addition, in some interactive installations individual behaviours, emotions and personalities are closely related to the work's image processing. Images in installations are not pre-fixed or predictable, but rather represent changes in the viewers' interactions with the installations' evolutionary image processes (Sommerer and Mignonneau, 1999). Timothy Druckrey notes: *"If images are to become increasingly experimental, then a theory of representation must be evolved to account for the transaction provoked by participation"* (Rush, 1999. P117).

4.3.2. Audience interaction with the artwork

Regardless of the method of art production, the ultimate aim of any artist is to galvanize the viewer, to make contact and to be in meaningful relationship with him/her by communicating ideas, emotions and senses. In a distinctive way, the artwork and the artist aim to influence the viewer. This section will discuss and highlight the importance of involving the audience as a part of installation artwork.

4.3.2.1. Audience definition

The term "audience" in this research is a longstanding one, which describes the people to whom the artwork is exhibited. The audience cannot be labeled as merely observers or viewers, and it is difficult to single out individuals who interact with a piece of art. Some installation artists even consider their audience

as an important element of the creation of their artwork; involving the audience with the artwork quantifies the success of the work among other elements. The response of the audience is an important indicator for success, but it does not directly influence the art practice itself. But although art is often free from client demands and economic imperatives that have streamlined design, artists traditionally approach their audiences with finished work.

4.3.2.2. Degree of audience participation

In the 1960s and 1970s artists and art theorists extended their area of interest in terms of artwork and considered audience participation to be the primary element in the success of the production. A Professor of Technoetic Art[29], Roy Ascott[30], developed a theoretical position that focused on the interaction between the audience and the work of art. The degree of this interaction with the artwork depends on the relationship between the artwork, artist, viewer and environment (Ascott, 1966). Cornock and Edmonds (1973) define the interactive categories within the artwork to include: (1) static, (2) dynamic-passive, (3) dynamic interactive and (4) dynamic interactive varying (Cornock and Edmonds, 1973).

Static refers to an instance when there is no physical interaction between the artwork and the viewer that can be observed by someone else. Thus, the art

[29] Mel Alexenberg interpreted the term 'Technoetic' by *"understanding the dynamics of the creative process in contemporary art that arises from the confluence of art, science, technology, and consciousness research" (Alexenberg, 2006).*

[30] A British artist born in 1934, working with cybernetic and information and communication technology.

object does not change as the person views it. However, the viewer may be experiencing personal psychological or emotional reactions. As in art galleries and museums the visitors look at paintings or print, listen to tape recordings and talk to others about the art on the walls and, generally speaking, obey the command not to touch. This type of interaction led the researcher to expand his vision of his artwork production in terms of interactivity. Hence, this category represents the interaction in the visual perception of the artwork. And this is the only form of interaction in the researcher-produced multimedia installation, where the viewer interacts with a projected multimedia animation of abstract painting visually and in particular with its hidden layers and colour. Although, the researcher's animation is not touchable and does not require any physical interaction, the combinations of sound and moving images create emotional interaction.

Dynamic – passive in this category are the environmental factors such as temperature, sound or light enabling the audiences to change or modify the mechanism of the art object. Thus, any changes such as: clicking, dragging and dropping to modify on-screen elements are entirely predictable. The viewer is a passive observer of this activity performed by the artwork in response to the physical environment. The physical interaction with these elements lead the user to become a cause and control the interactivity in the category.

In a digital interactive artwork, the user engages in an artistic feedback loop to transform artistic elements and relationships to changes in colour, shape, texture, text, animation, music, sound, voice and screen transitions. The user makes choices about these over time, creating ever new and updated information configurations and perceptions. The user builds an iterative cycle of aesthetic relationships, and through this cycle of perception and co-creation, fulfils the meaning of the work.

The dynamic-passive but the human 'viewer' has an active role in influencing the changes in the art object. Viewers in this category are playing the major role of modifying or adjusting the work of art and although their interaction is passive the response is nevertheless crucial.

Dynamic –interactive (varying): similarly to other categories, dynamic-passive and dynamic interactive, with the addition of a modifying element which is a human or a software program. This modification enables the audiences to change the original specification of the art object that cannot be predictable (Edmonds, Tuner and Candy 2004).

Some digital interactive media artists consider themselves as the audience for their production. As an Australian visual and inter-disciplinary artist, Simon Biggs suggests that classical artists must interact with their artwork by being their own audience (Austin and Vogelsang, 2003). They judge and adjust their

artwork until deciding it is finished. This concept of Biggs encouraged the researcher to test his artwork production by viewing it from the point of view of an audience. This shift in the evaluation process from the artist producing artwork to the viewer led the artwork to be easy to understand by other viewers. Whilst artists consider themselves as viewers during the creation process the manipulation and adjustment of the artwork will be controlled by both perspectives, that of artist and that of viewers.

These approaches empower the audience; the artist consciously becomes involved in a participatory process that puts the experience of the audience at the centre of the piece. This is an interesting and important shift in the role of the audience as well as in art practice. The engagement of the audience becomes an important factor in the creative process of the artwork. Keeping this in mind however, research for this project followed often-traditional methods of production. The creative process was based on the thoughts, experiences and emotions of the artist himself; feedback on ongoing work normally came from the self, peers, patron, or the curator. Thus, Biggs' words were kept in mind: *'I am aware that I tend to make my work for an audience of one, myself*' (Austin, Vogelsang 2003).

Thus, the opportunities for audience participation were magnified by widespread access to digital technology and the development of generative systems in sound, image and multimedia based art (Edmonds, Tuner and Candy, 2004). The

audiences are free to manipulate and explore the installation in any way that is more convenient to them to gain full understanding through their thoughts and experiences.

4.4. Abstract painting animation

Man Ray's photograms and Atget's images of Paris demonstrate how newly developing technology, in this case photography, can be used in emotional and expressive responses to human experience and environment. In subsequent decades, the sequential photography of scenes over periods of time provided the moving image on screen as a device that allowed an audience to see the depiction of time itself as related to people and places 'captured' on camera (Burns, 2006). By making use of the human eye-brain configuration, with its lack of ability to see individual images within a sequence that is presented at little more than twelve pictures per second, photographers such as Land and Frieze-Green brought into being the moving image film (Heliotrope). Now the fourth dimension of time could be captured, along with depictions of the three physical ones into a perspective rendition, and projected onto a viewing screen for the audience to experience. Along with this, scientific, physiological and natural history subject matter could be recorded over time, and body movements, motion and change could be projected onto screens for all to see (notes by the researcher from John Burns, 2006).

Directly following this boom in technology, these new techniques were applied to artistic expression. Ideas and narratives could now be portrayed on screen in the form of moving images that had been directed and recorded rather than simply captured from nature. Moving film photography as a technique for drawing with light across a surface and within time frames provided a means for artistic expression in addition to recording details of one's surroundings. New aesthetics and working methods were developed that incorporated painting, theatrical and storytelling practices into the newly developing art form of moving film. Land, Eastman and other pioneers would later go further and bring the element of colour perception into film technology thereby increasing the mix to include other elements of naturalism, compositional considerations and meaning.

Such elements figure strongly in painting and drawing: these technological advances would later merge with traditional painting and graphic art forms as a means of personal and artistic expression.

4.4.1. Abstract painting and movements

Paul Klee notes: *"The work of art is born of the movement, is itself a fixed movement and is perceived in movement"* (Hutzler, Gortais and Drogoul, 2006. P101-106). Abstract painting is a dynamic art, which can be explored through both creative processes and evaluation; a process created by organizing colours

and shapes that the artist interprets as being aesthetic. Collopy (2000) agrees that the third dimension of abstract painting is motion. This changeable dimension depends on the introduction of temporality to painting. While painters and sculptors have long attempted to suggest movement in their static works, the development of a true visual art of movement awaited the invention of film.

Thus, abstract art animation is the new name of an art that began early in this century, when Futurists, Dadaists and other modern artists emulated the motion picture as the medium that could add movement to their paintings and graphic designs (Starr, 1987). Soon after, Winsor McCay made his first animated cartoon, based on his comic strip *Little Nemo* in 1911.

As Collopy (2000) states, Leopold Survage was extremely interested in introducing movement into his painting. He produced more than 200 watercolour sketches that represented key ideas for an abstract film, though it was never produced. Survage created sequences of abstract paintings in Paris, which he called “Coloured Rhythms”. He patented what he considered to be a new art form. Failing to persuade the Gaumont Company to film his work in their primitive new colour system, Survage abandoned his invention and spent the rest of his long life as a Cubist painter.

In the earliest days of film, a small number of filmmakers turned their attention to abstract works that they often designed to accompany musical performances. In 1921 Hans Richter created his first film, Rhythmus 21 [figure 4:5], which explored the visual elements that transpired through different stages creating a transformation and movement for the eye. Richter was one of the first to recognize the possibilities cinematography offered the artist (Richter, 1952). Today, Barbara Neubeur, a German filmmaker for Direct Film Contemporary, also uses direct film techniques to create moving visuals that respond to music.

This early interest has gradually developed, becoming what is now called *computer art* (Hutzler et al. 2006). Thus, the creation of animated art is one of the major reasons that computer technology was utilized to create artwork for this research project. The emergence of computer technology in art is a generation of coloured images in a more or less automated manner. A line, shape or colour bear a different meaning in themselves, but are particularly meaningful with reference to each other, thus generating tension and movement.

The tension created by shapes and colours must be resolved by the addition of appropriate new coloured shapes. A shape demands the addition of a new one, which in turn requires a third one as a counterpoint, in a creative dynamic in which the artist is guided as much by the gestated work as by his or her own spirit. As indicated by Hutzler (2006), abstract painting elements such as line,

colour and shape must be combined in equilibrium in order to end the creative process without disappearing.

Abstract painting can be looked at as visual research because the artist guides the evolution of a complex system of interacting shapes and colours. Some abstract animators focus on the abstract possibilities of moving visuals that are analogous to the more abstract experience of music (McDonnell, 2003).

4.4.2. Abstract art animation

Animators, illustrators, filmmakers and computer specialists use computer software to create their animations (McDonnell, 2003). Animation creates the optical illusion of motion, rather than recording motion as a kind of visual technique; this is usually used for motion pictures. Nowadays, it can be done with the aid of a tiny virtual camera, whereas, originally animation was created by filming a sequence of drawings or positions of models. Progress made now in software and hardware development makes computer generated imaging and animation not only more accessible, but affordable in many areas where the importance of visual communication is needed.

As indicated by Pamela Turner (2004), photographer and computer animation artist, there are also the designations of “non-objective” or “absolute” or “concrete” animation, which do not include references to recognized forms but

instead employ imagery, are completely liberated from icon and symbol, and utilize instead form, light, colour, movement and time. There is no story, or narrative, per se, but to say it does not have meaning or content is far from accurate. Instead, the use of abstract or pure moving imagery enables the expression of content and meaning that is not possible within narrative, representational imagery or media.

Turner further determined that abstract animation needs more attention and a set of expectations. It would be helpful to place oneself in the context of hearing music or experiencing images, such as patterned, vivid textiles, as Sara Petty, whose lyrical animations allude to the magic in everyday life (Turner, 2004).

The process of creating the work was considered as essential as the imagery itself. Thus, the researcher uses computer animation to record the process of creating the abstract painting, therefore, increasing the viewer's interactivity through the involvement in the hidden layers of the painting. Moreover, exploring animation reverted to the experience of the viewers in the hope that they can classify the animation into categories. Abstract animation is different from the classical, narrative style of computer animation, in which characters, objects, and story are recognizable. From the researcher's point of view the abstract animation does not seem to have a beginning, middle or an end. However, what makes the abstract animation recognizable is the process of creation and the way in which the animation is played. Moreover, there are

many kinds of personal, experimental, perceptual and abstract films and infinite ways of understanding them. It might help to compare an 'abstract' film in which there are no figures to a piece of music in which there are no lyrics.

Displaying abstract animation allows the viewers to explore and experience the animation's structure and takes the viewers onto a step-by-step directed path. This individual aspect of the film is due to the fact that each viewer brings his or her own experience to understand the animation.

Abstract animation, as with all abstract art, requires the participation of the viewer. It can be viewed numerous times, and each viewing will have a different effect on the audience, based on many factors, but primarily on the viewer's mind set, previous encounters with the animation, and the memory of it.

4.4.3. Techniques of animation

The practice of animation closely followed the beginnings of cinema practice with stop frame effects, matting and animated sequences. After the introduction of television, animation in the world of art flourished. The practice of animation has changed drastically with the adoption of computer aided graphic design and more recently with computer rendered animation and special effects.

Georges Melies, the creator of special effect films, created “A Trip to the Moon” in 1902 using many techniques, one of which was to stop the camera rolling, change something in the scene and then continue rolling the film (Dirks, 2005). This is a very similar idea to that of stop motion animation. With the limitation of resources, Melies used his creativity, and he managed to make a film like nothing the world had ever seen before.

By using a camera to show an abstract painting often the artist tracked the best illustrated points being made to evoke the viewers to concentrate on the point of interest. The purpose of using this function is to add visual interest to the documentations. However, now that scanners and high quality digital still cameras are available, it is often more convenient to generate tracking shots using software. The source image is first scanned or photographed at high resolution. The following are some techniques used for animation.

4.4.3.1. Rostrum camera

The term ‘Rostrum Camera’ means a controlled camera which was designed for stable movement. It is an adapted camera and mounting mechanism. In 1964 Jack Kennedy with help from Jim Lynich designed and created the animation camera rostrum in Australia. By 1982, rostrum had been used to shoot hundreds of television commercials and documentaries for clients all over the world including subcontracted TV series work for Hanna Barbera, animated features "Footrot Flats" and "Family Dog" and a half hour animated episode of Stephen

Spielberg's TV series "Amazing Stories" (Goldner,2006). For the last 38 years rostrum camera was used in the production of 2D animation in television commercials, documentaries, children's television series, film title sequences and animated feature films produced in Australia and internationally.

Later on, Australian engineers added an electric motor to ‘Oxburry Rostrum Camera’ to drive the camera’s carriage zoom mechanism. The engineers adapted the gun-turret motor of a B52 bomber to achieve certain high precision when the camera stopped and started again with a very high degree of accuracy (Author Unknown, 2004).

Cel Animation is another name for rostrum technique. Cels are a transparent plastic that drawings are traced onto. Cels are then placed over a painted background and photographed one by one on a rostrum camera (notes by the researcher from John Burns, 2005). The drawing can then be scanned and digitally transformed to 35 mm film. Although the digital influences the Cel animation, the traditional Cel animation is still preserved now with its original characteristics of the past seventy years.

Bell & Howell cameras were used on the rostrum when technical challenges were involved. It was designed with a pilot-pin mechanism, which positions each advancing frame and helps to produce rock steady images after multiple

passes. This made the camera most suitable for special effects and animation use later on.

In figure [4:6], the dark blue shape is the camera. By moving the camera up and down the column, the illusion of both big and small artwork can be created. This technique of moving the camera up and down creates what is known today as zoom. In other words, with the recent technology this feature referred to a zoom in the camera. The animator can move the camera towards the image to enlarge the objects inside the picture. Whilst moving it backwards minimizes the size of the details in the picture.

The simplified animation table shown in the bottom of the figure [4:6],is just one set of single pegs only. An artwork can be on separate pegbars and these in turn can be made to move in various ways east or west and north or south and can rotate as well. A complex camera move can be incredibly challenging to achieve. This technique of moving the pegbars into a different direction can cause the animation. It is obvious that this method needs more accuracy to create the animation required. This method is considered as an introduction of computer animation, together with stepper motors in the 1970s, and made life a lot easier for camera operators, but using it still remains a skilled job (Author unknown, 2004).

On the other hand, nowadays, it can be imagined that the virtual rostrum is very much like the real thing. Each piece of artwork can be on different pegs and move and spin on any axis without limitation to the number of pegbars that can be used. In fact, real rostrum cameras often use at least two sets of pegs, bottom and top, above and below the artwork. This is so that one set remains static, while the other set moves. Although the rostrum camera technique involved more than one layer in the creation process, it is still limited to some points. Creating depth through displayed layers on the pegbars can be made by moving the camera towards the first layer to see through the transparent layer behind (notes by the researcher from John Burns, 2005). This method can create depth but it still has a limitation. Rostrum camera technique allows multiple layers on plastic or a sheet of glass to be moved backwards and forwards and sideways. This will allow the camera to peep through one layer into another deeper layer.

This technique assists the animator to show the interesting part of the painting that he/she may want to become visible. However, this technique always pointed down and cannot turn back to look at the layers which it has already passed through. The limitation of this technique led the researcher to think of another method that is more flexible and can flip and rotate in different directions.

The significant change to the camera is that the rostrum camera itself can now float off the column and move freely anywhere in space while it always points

straight down as indicated in figures [4:7] and [4:8]. Thus, this camera has a limitation because the target point is limited to one direction.

However, advanced digital technology allows users to operate the camera in different directions without limitation. Many professionals entering the 2D animation business will have at least some knowledge of computer 3D programs such as Light Wave and 3DMax, and 2D camera and 3D usage differ slightly. 2D and 3D can be very closely integrated in many ways, but 2D remains 2D even though it may be viewed from an oblique angle, similarly to traditional paintings.

Furthermore, when creating animation using this technique, each character or element is drawn on a detached piece of transparent paper. A background is also drawn on a detached piece of opaque paper. Then, when it comes to shooting the animation, the different characters or elements are overlaid on top of the background in each frame. This technique also saves time in that the artists do not have to draw in entire frames, but rather just the parts that need to change, such as individual characters, which are known today as ‘animatic’ animations. In this technique, sometimes even separate parts of a character’s body are placed on separate pieces of transparency paper. By using this method artists can create single frames using a standard computer graphic tool, Adobe Photoshop for example, and then composite them. These can then be saved as a movie file or output to video. In addition, the camera and rostrum's last job early in 2002 was

the shooting of "Ada" an animated short film for the SBS series "Australian Animators".

4.4.3.2.Slit-Scan

Slit-Scan is a technique associated with photography and cinema. It is similar to rostrum camera in terms of the camera being stopped and the images moving. This type of animation was used to create static images of time-based phenomena. In this method the camera remains in the same position and focuses towards one direction whilst the printed images are crossing the slit box. An American film director and producer Stanley Kubrick (1928- 1999) used this technique in his film 2001: A Space Odyssey in 1968 (Kubrick, 2005). A large portion of the movie ‘Star gate’ sequence was generated using this slit-scan technique.

Investigating this technique, the researcher found that this type of animating is limited. It will make his animation controlled by the angel of the camera and its limitation within the precise slit. Slit-Scan and rostrum camera are limited in terms of moving the camera freely. Both have the same function in that the images are moving in front of the lens of the camera whereas with the aid of the computer the camera can move within the layer of the images rather than just capture the surface (Author unknown, 2004). More discussion about these aspects will be in the next chapter.

4.4.3.3. Stop motion

This is any type of animation which requires the animator to alter the scene and shoot sequenced single frames to create an animation. This is a type of stop motion animation in which each component is moved individually, frame by frame, to create movement. It is normally shot at 24 frames per second for film although it may often be a double shot of 12 frames per second.

It works as follows: the camera lens is pointed towards an object or scene. One frame of film is exposed and the camera advances by one frame. Now, the object or scene is moved or changed. Another frame of film is exposed, and the film advances by one frame, the object or scene is changed again, and so on. After doing this 24 times, one second's worth of moving film is produced. Now, by playing all the frames back at the normal film speed of 24 frames per second, the object or scene elements move naturally as if in 'real time' (notes by the researcher from John Burns, 2005).

4.4.3.4. Digital animation

Like stop motion, digital animation encompasses a variety of techniques, the overall idea being that the animation is now created digitally by computer. Digital animators produce computer-generated design, characters and animation using a variety of software tools that emulate the physical cameras, film frames and scene elements as described above. Animators draw characters in different

positions to coincide with movement in a certain direction, and synchronize movements with words, action, music and sound effects (Kern, 2007).

Today, 3D images are created using computer animation or modeling programs and with mapping, lighting and movement facilities, can produce much more realistic and complex sequences of images. To allow these elements to move, each is given a digital framework around and within which the animation is built. This process is called animation rigging. Various other images or mappings can be applied, such a simulated skin or hair and natural effects such as fire, water and atmospherics (Author unknown, 2004).

3D computer graphics are different from 2D computer graphics in that in a three-dimensional representation of geometric, colour and atmospheric, data is stored in the computer memory for the purposes of processing and producing rendered 2D images. Sometimes these images are later displayed in a pre-rendered form, and sometimes particularly when using certain per lit texture, mappings, they are rendered in real-time. In general, the art of 3D modeling, which prepares geometric data for animation in 3D space, is akin to sculpting or photography, while the art of 2D graphics is analogous to painting or drawing.

However, 3D computer graphics rely on many of the same algorithms as 2D computer graphics. In computer graphics software, this distinction is occasionally blurred; some 2D applications use pseudo 3D techniques to achieve

certain effects such as lighting, while some primarily 3D applications make use of 2D visual techniques for mapping and texture generation. This mix of movements of the technique the researcher applied to his production because it was possible to control the camera through the textured layers of his painting.

4.5. Summary

As should now be evident, the content available to abstract animators is unlimited, as there are many ways of expressing the numerous experiences in the mental and spiritual plane. The premise of the animation may not be obvious, as recognizable objects and storylines are not adequate in conveying these ideas. Instead, a different set of expectations should be carried into the screening room with the viewer; there should be openness to experience and a willingness to implement the abstract domain of visual language. Humans are given access to the inner world of the artist, and their interpretation of this realm; the corporeal is no longer meaningful.

This chapter discussed the initial concepts of animating images to create the illusion of movement. It highlighted the development of digital technology with abstract painting animation. Due to the huge improvement of digital technology features, animation image materials have opened possibilities for artists to create their artwork in more complex vision. This chapter also argued the value of interactivity between the viewer's reaction and the work of art. It is assumed that

physical interaction always influences the audience, however, invisible interaction also has its impact on the audience.

Moreover, this chapter covered the initial start of using motion picture techniques from early century to our era.

CHAPTER FIVE: CREATIVE PRODUCTION REFLECTION

5.1. Introduction

Throughout the research project, theoretical and practical perspectives were closely scrutinized and examined. In addition, creating the artwork demanded a lot of personal reflection. Moreover, the context of work was examined through a study of the history of abstract expressionist paintings and an analysis of the process of development in relation to the creation of the artwork. The developments of the creative production process will be discussed here in detail, covering three areas: traditional abstract painting, digital abstract painting and abstract multimedia installation.

5.2. Stages of artwork production

As a fine artist, the researcher's prior aims of making art were to produce abstract work that could be shown in a normal gallery. This involves a traditional way of engaging with an audience to encourage them participate in the show. But the researcher noticed that, as the theoretical investigation developed, his creative thought did as well. The researcher's work therefore now explores the nature of the painted surface in traditional form, in relation to the configuration of picture plane, viewpoint, space and time, and the new configurations as allowed by analogue, filmic techniques and more recently, by

new media and digital procedures. In this exploration, the researcher considered the ongoing relationship between the arts and the technological and the aesthetic that have occurred throughout history and have facilitated, and derived benefit from the interplay between those disciplines.

This practice-based research essentially investigates the area of producing abstract painting by using new technology. As a painter with experience in new technologies, the researcher's investigation was undertaken from the perspective of an artist. He specialises within this specific area rather than in film, photography or any other visual medium. Knowledge about the history of abstract painting, and the computer as a tool, assisted with the understanding of this project's theoretical framework underpins this research.

5.2.1. Traditional abstract painting

Abstract painting usually involves big and small issues, emotions and feelings, both spiritual and formal. Since the time of the early modernists, photography, sculpture, film and painting have had to answer to such criticisms. Abstract painting is a way of interpreting the artist's feeling and emotion into the surface of the painting through the application of colour and pigments. This section of the research focused on making abstract painting to express the researcher's inner feelings and emotions, which was achieved through the use of colour applied to a flat surface.

At this stage, the researcher started with the use of conventional materials such as brushes, canvas, oil colour, acrylic colour and paste to paint images. These techniques were learned and perfected during his Bachelor's Degree. Whilst completing a Master's Degree research and knowledge about the development of traditional methods of abstract painting was gained and developed in more depth.

The researcher therefore used the computer at the Master's stage as a tool and shifted to a mixed media approach, influenced by modern masters like Jackson Pollock and Wassily Kandinsky. Thus, from the point of view of a painter in traditional media who is still open to new technology, the computer programs available today were seen to be increasingly important as similar but somewhat different tools as discussed in chapter three.

The main goal of the MA project was to create an abstract painting that related to the researcher's culture and personal influences using traditional painting methods. This was achieved by joining Arabic elements within the paintings. As the artwork developed, more symbols gathered from the researcher's home country were added and efforts were made to change the colour palette to substitute, or to suggest, missing parts within the artwork.

Figure [5:9] shows an abstract painting by the researcher. This painting 'Islamic' consists of acrylic colours on canvas painted in 2004. The researcher used

Islamic symbols mixed with his own palette of colour. The crescent in the top part of the painting as well as the triangles shapes on the lower part indicates a strong reference to Arabic culture which is the researcher's point of origin. These elements can be seen everywhere in the researcher's home country because they refer to the mosques and old houses. As the researcher used to visit the old town in his country in his childhood, this had a strong impact on his artwork.

Moreover, in the lower left hand side of the same painting there are some transparent Arabic letters which give similar identification. In this method of painting the accident of chance has a strong input into the creation process because the researcher mixed the colour onto the painting surface directly without sketches.

The researcher is influenced by other Saudi artists in the way he interpreted his feelings and his reactions towards the environment. When he started his traditional abstract painting, the researcher imitated other Saudi artists who used the same elements in their productions. As a kind of cyclic development and self criticism the researcher found out his method of producing abstract painting.

After living in the United Kingdom for a few years, the researcher merged his Arabic cultural background with his influence by the British landscape. He produced abstract paintings with large coloured space referring to the landscape.

In his early artworks, the researcher used hot colours such as yellow, red, and orange in most of his productions. However, with the influences of the cold climate and large green landscape he readjusted his colour palette. These were the first reflections on the researcher's artwork productions.

Feelings and emotions were expressed through these artworks. Furthermore, the researcher was concerned about ensuring the involvement of the audiences in his artwork production emotionally. Each abstract painting has significance for both artist and audience; the paintings have something that aim to retain the audience's attention. This important connection draws the audiences into the work of art; it keeps them looking at the work of art and generating emotional reactions.

Frank Stella[31] agrees: *"what you see is what you see"* (Stella, 2004). With this comment Stella meant to involve the viewers in a full engagement with his artwork. Stella assumed that each individual member of his audiences will perceive his artwork from his/her own point of view. The interpretation of artwork depends on the experience of the viewers and the artist does not need to explain his/her meaning behind his/her artwork. Figure [5:10] shows that Stella has been working with flat surfaces and focusing his attention on a picture's surface structure. Stella's work shows that abstract painting can be redefined, and that pushing against the limitations of the painting can renew an artist's ambitions. With the researcher, traditional painting sought to break this

[31] An American artist born in 1936, considered as a significant abstract expressionist.

limitation by involving the audience more intensely in his artwork. Thus, the researcher through his research found that most of the abstract artists are interested in the surface of the painting and the colour. But how a flat surface can engage the viewers to interact with painting is one of the researcher's desires when making abstract painting using traditional methods.

Stella's approach is literal, and he explains his art in an often-quoted remark that set the tone for art-critical discourse in the sixties. Stella made emphatically flat paintings, which sought to remove illusionist space from the picture. The picture's surface echoes and confirms its depicted shape, reinforcing modernism's notion of a painting's flatness being critical as it sought to establish the painting as an object in its own right.

Jules Olitski[32] notes: *"Paint becomes painting when colour establishes surface"* (Mrkusich, 2005, P23). Thus, it can be assumed that a painting is a painting to the degree that colours alone can describe and form a surface. Colour is *form* for painting, just as space is form for sculpture. In painting, colour describes recessions and projections; textures and optical effects. The researcher sought to find out how different colours worked together or against one other depending on the audience's viewing experiences. In the researcher's journal, he notes: *"There is a hidden dialogue between me and the canvas; my mind and my brushes; my eyes and the colours etc…I prefer not to make any sketches before I start my painting, combining accurate observation with my personal thoughts of*

[32] A Russian colour field painter and sculptor (1922-2007).

simplification. This attached to my painting, has impacted on my images to become increasingly non-objective over time" (Maghrabi, 2004).

The researcher believed that each abstract painting has its own story. It has a special surrounding and conveys a narrative. Nature and everyday life have a strong influence on our behaviour, thus, an artist's production is impacted by the environment. He believed that each layer on his painting has its own secret and the depth inside the paintings is created through stories and narratives. These thoughts about the researcher's paintings led the viewers to engage with his artwork production as a kind of exploring of the mysteries behind colours and surface.

Moreover, the researcher noticed that when he creates any traditional painting he has to set up his studio and prepare the atmosphere rather than working in non-specific areas. The researcher is more passionate about his painting and assumes that the painting tells him when it is ready and is finished in a kind of a dialogue between him and his canvas. This attachment to the painting led the researcher to attach to his artwork achieving the goal of an unconsciousness level of engagement.

Furthermore, there are emotional and spiritual connections to the work, especially regarding the use of colour. This relationship links the researcher's thoughts directly to Jackson Pollock's idea: "*On the floor I am more at ease. I*

feel nearer, more a part of the painting, since this way I can walk around it, work from the four sides and literally be in the painting" (Harrison and Wood, 1992. P574).

Pollock assumes that full affiliation with the canvas refers to spiritual engagement with the artwork. Achieving unconsciousness or subconscious levels of engagement with a painting enables the artist to become part of the canvas; moving around the edges and stepping on the canvas, entering into the picture plane, without realizing, as Pollock suggests. This involved process of painting allowed the researcher to communicate with himself and the audience through the artwork. This emotional engagement led the researcher to capture feelings, emotions and spirituality in order that the audience could enjoy the paintings as an attempt to understand the feelings about how and what things really are.

Throughout the researcher's journal, he often noted that he started painting from the middle area of the canvas. In doing this, he felt more attached to the image and was better able to control the whole canvas from different angles. Most of the researcher's traditional paintings have the same elements, which is the illusion of depth through the application of colours and the relationship of the layers of the surface. The artwork shows progression and skill development over a series of pieces. By integrating colour and hue, pattern and texture, light and dimension, these elements are rearranged in new ways. The audience is invited

to look or to enter into the layers of the artwork, whilst the illusion of depth enhances their views. Colours are also used and mixed in order to take the audience on a journey across the paintings.

As mentioned above, the researcher was concerned about the surface of the painting and how viewers engaged with the artwork to interpret the mixtures of the colours over the flat canvas. The researcher was trying to gather his viewer's distracted attention and frame it, emotionally, at interesting points depending on the his/her experience. Although, the flatness of the painting privileges the abstract painting from other art disciplines it is still limited. This limitation led the abstract artist, Frank Stella for instance, to strive to overcome this limitation.

Stella believed that a painting is something which can be touched and a tangible thing in terms of physical existence (Stella, 2004). He would like to eliminate the concept which considered a painting a flat surface with paint on it and nothing else. Stella was interested in the picture's planes and investigated the surface of the artwork and its audience. He remarked on the technique of the Renaissance artist Michelangelo Caravaggio[33] and how he used to varnish materials over layers creating depth over the flat surface as mentioned in chapter three. Caravaggio painted over his canvases with a scraped brush and palette knife as can be clearly seen from his paintings. He created a dynamic surface

[33] Michelangelo Merisi da Caravaggio 1571- 1610 Famous Italian painter in the renaissance period.

penetrating the picture plane and moved it forward into the viewer's space (Piper, 1981).

Stella further involved himself in the viewer's space. Although his earlier artwork method was limited to flat perceptual geometries, he interplayed into three-dimensional aspects. He included 3D components which physically interplayed with the viewers demonstrating his interest in expanding the exploration of the third dimension. He created the substructure of his artwork out from the picture surface endeavouring to make his production more understandable by the viewers. This technique can be compared to the innovation made by Caravaggio in his paintings over the Renaissance period. This spatial engagement in Stella's artwork gave him his colour theme. In addition, Stella produced 3D abstract artwork in his interplaying the physical space between the artwork and its audience.

In fact, the researcher whilst working in his studio noticed that each painting has its depth. This depth can be created through illusionistic space by applying the layers over each other. On the other hand, each brush stroke can create the third dimension. This exploration of other artists' concerns about a picture's planes led the researcher to think about the next stage of developing his creative production and push it forward. The researcher during the creation process of his production found that the traditional technique is limited to the size of the canvas and the materials used. From his personal point of view the researcher

found that the edges of the painting control his vision to go beyond the frame of the picture rather he controls the surface. This limitation led the researcher to search and explore another tool that may minimize this limitation which made him use the new technology in the next stage.

Furthermore, in the field of production of traditional fine art paintings, whether in oils or other mediums, the perception of the original is very straightforward. The painting or other artefact exists discretely and uniquely in one place. It may be photographed or copied as an engraving as many paintings of antiquity and later periods were. These engraved or photographed copies, of course, encounter the copying aspects that the researcher has written about in previous chapters; even though they themselves are not originals. The original still exists separately. This originality of the artwork production is diverse with the digital production as discussed in the next section of digital creativity.

The next stage will cover the development of the creation process and the development of the researcher's artwork.

5.2.2. Digital abstract painting

Working with new technologies throughout this research gave the researcher an insight into how to incorporate this technology into his work. Artists are experimenting with similar technologies that seem to have same equivalence to a

real world painting environment. These explorations have involved creating paintings with a variety of styles, effects and paint textures. In advanced computer painting applications artists are able to create similar end results to traditional painting by using complex image composition and manipulation. With Corel Draw[34] software, for instance, artists can create their effects directly through simple brush strokes in a manner similar to the manipulation of real brushes. Although this software is considered simple, fast and heuristic, it does not express the truly realistic physical behaviour of thick paint or the optically correct composition of colour pigments.

Recently, computer software has been developed by adding a simplified and natural interface that takes advantage of skills transfer from a traditional painting environment to a computer painting program. Software companies have improved their applications interfaces' to become more user-friendly and to simulate the naturalization and intuitive use of painting tools.

Again, for this research, the artwork was inspired by the depiction of colour and feeling. To begin a new painting the researcher started to collect images in his memory, journals and computer to create unique characteristics. These ideas were then transferred into his own visual vocabulary, which were used in the studio to develop his prior thoughts. He then looked for the right techniques and materials to express these ideas.

[34] Corel Draw is computer software that was designed by Corel Corporation, Canada. It is not only a vector graphic editor, but it is a graphics suite and it contains varieties of fonts and clip art as well as its ability to edit bitmaps.

Notebooks were used to regularly record ideas and inspirations, but with digital technology, the integration of ideas was input directly into the computer. The initial experimenting with digital materials was done by scanning some of these ideas and thoughts into the computer and then increasing the size of the picture and altering colours. Figure [5:11] a copy for the researcher's journal 2004, shows the use of the computer as a diary to record the remarkable changes and development of production.

In this figure [5:11] the original traditional abstract painting created by the researcher was photographed. The photograph was imported into the computer by use of a scanner. The elements in the painting were analyzed and linked to/or compared with other contemporary Saudi artists. The notes were added to the painting in text format and some tips for developing the ideas and the creation process were annotated. This method made the improvement and the development of the digital manipulation more flexible as the researcher wrote down all his notes and suggestions and analyzed the artwork in the light of these comments. This is considered as self criticism to evaluate the artwork production by the researcher before displaying the painting in the gallery. This method led the researcher to point out all the skills that he learnt through his use of digital equipment. At the beginning the researcher was using the computer in his production as a new tool to show the new generation of his paintings.

As indicated earlier the researcher tried to escape from the limitation of the canvases and work digitally to resolve this issue. In his initial experimentations the researcher found out that the size matter of the painting was controlled and he could increase or decrease the size of his painting according to his thoughts and ideas.

To continue developing the use of technology in visual art, the researcher used digital technology to manipulate and enhance the images. He noticed that he could present the impression of a moment in time and place more powerfully, while simultaneously creating a more complex image and surface in a shorter time than would have been possible when using traditional materials. This is another element that is reflected in the researcher's production which is the time. With digital technology the researcher was able to finish his artwork in a shorter time than he would normally spend with a more traditional method. This persuaded him to continue working on his computer for a long time to produce lots of digital paintings.

Because of the rapid development of artists' materials, all new tools change both the way the artists work and the final object itself. Thus, the choice of tools, and how they are handled, makes a huge impact on the message conveyed by the finished work. The experience with new technology allowed the researcher to consider this new technology as just one of many tools. The researcher enjoyed experimenting with this new tool and finding useful applications for it; without

it, however, he did not feel impoverished. The researcher considered his audiences one of the main elements in the success of his artwork and therefore felt he had to gain their approval of his digital production. At this stage the researcher considered starting his field trip to Saudi Arabia and gathering the artists' and viewers' opinions about his digital artworks. This will be covered in detail in the next chapter.

The researcher noticed that with his traditional technique the painting has texture which is caused by applying layers of colours over the canvas. However, with the digital painting the pictures come out of the printers which normally used air brush to apply the colour rather than brush strokes. This means that the printed images will be totally flat and the creation of the illusion of depth will be through layers not the colours. Moreover, this feeling raised the question: is this frustrating, or is it the essence of pleasure provided by the picture? In traditional painting, the illusion of depth was created by using colour manipulation of the surface whereas with new technology the illusion of depth is not necessarily created in this manner. Rather than reconstructing the depth-of-field, the researcher tried to show the colours and surface through the illusion of a depth of layers. This affected the researcher's thoughts about the abstract digital painting and produced the hope that the viewers would accept this kind of production by this technique. As a traditional artist used paste and other materials to create texture, with a digital tool it is possible to apply the filter of such textures to create this feeling of physicality and touch. However, unlike

traditional painting, digital painting is often truly flat on a screen and may lose this sense of protrusion on the surface. In the production phase of this stage, a number of paintings dealing with the nature of abstract expressionism with the use of colour and flat surface were produced. The artwork centred on the illusion of depth inside the painting by applying more than 10 layers to each painting to create this deceptive appearance.

Many traditional skills were used, and they continued to be a perfectly satisfying means of expressing artistic concepts. Thus, the total loss of traditional skills in painting would represent a loss to the successful achievement of producing a strong artwork. But each painting the researcher created required different handling; some by hand, some by computer. It is the balance between the two that makes his current artwork strong and engaging in his opinion.

The researcher previously mentioned the ‘same but different’ aspect of painting using a computer and with traditional materials such as oil paints. Some physical differences are obvious; artists use computer pens and brushes that do not actually touch paint. The characteristics of the feel, scent and texture of paint and brushes is not present. Moreover, the artist’s hand does not move across the picture surface but is somewhere else; usually at the desktop. New methods of orientation in the creation of the ‘mark’ or ‘stroke’ need to be learned. These facts restricted the researcher again and brought him up against some limitations. He was able to see the painting from different angles and change the

contrast of the colour very easily but with no sense of touch or smell. Using sensation is an important feature in the traditional method which led the artist to be more attached to his/her artwork and engage with it on a subconscious level as mentioned in chapter three. Whereas, with digital production this feature is missing and might impact on the viewers' considerations.

On the other hand, with the tools of new technology, extra possibilities appear, which can be more difficult to use than traditional painting methods. But other tools, such as the "undo" button on a computer, can simplify the artist's job as discussed earlier in chapter three. 'Undo' is much easier to use than removing paint from a surface with knife or cloth. In "Untitled" [figure 5:12] for example, the researcher created seven layers on top of each other in 2005. He was satisfied in using this technique as he could redo and undo any brush stroke that did not match the rest of the painting. He reconstructed his layers in specific forms to create the illusion of depth. This is markedly unlike the traditional technique where the illusion of depth is built up through colours. The researcher in this painting applied the darker colour to the back of the picture whereas the lighter colours were painted in front. With the aid of the computer the researcher found that he was able to save multiple copies of his artwork, which enabled multiple experimentations on the same piece of work. Moreover, he saved unfinished artwork to rework it whenever necessary. He can apply any background materials to any kind of medium he prefers such as canvas, wood, metal and so on which is sometimes difficult to merge in a traditional method.

All of these features signify a relationship to the painted work that is different to that of traditional materials. These elements, and other flexibilities offered by new technology, altered the researcher's relationship with his painting, and he considered whether or not these were positive, negative or both.

Whilst considering these aspects in relation to traditional painting and Abstract Expressionism in particular, some other aspects of digital art were explored. These areas are very different from traditional methods and cannot alter the way that pictures are perceived. The initial trend in computer software seemed to be based in commercial uses rather than as a medium for individual creativity. Upon completion of this research, those stereotypes changed. And whilst the qualities of photo-realism, surface gloss and special effects have seduced many artists, the researcher's experience as a painter has been somewhat different. Motivating factors throughout the research prompted an exploration of new technology in order to go beyond the bounds of photo-realism and to develop a different language of visual communication. The technical improvement of colour palettes and the luminosity of the screen colour provoked the idea of creating a new aesthetic with this new visual tool.

Use of the new medium also offered a much faster, cheaper and simpler way of completing artwork. Kuhlmann points out that the adjustable nature and development of the artist's tool is a key factor in the value of the artwork: *"One of the great advantages of working with the computer is to be provided*

with an inexhaustible, creative potential and I love to get inspired by using some forms and filters and to find my subjects in a playful way. That means - like the surrealists and some abstractionists in the early nineteen hundreds - I prefer to utilize Automatism for my creative processes in order to release my inner pictures" (Kuhlmann, 2000). Throughout the research, Kuhlmann's point was an interesting one to explore; digital painting production quality depends on the improvements of the creative tools and also on the expertise in use.

In the researcher's own studio (both at the University lab and home) he started to explore this new medium. He was inspired by the diversity of the colour and the luminosity of the digital images on the screen, which led him to experiment with this electronic medium from the perspective of an artist. The researcher saw lots of digital paintings by other digital artists online across the world and that influenced his creative production. He focused on digital abstract painting and the creation process.

Figure [5:13] for instance, shows a digital "Abstract" painting by the researcher created in 2005. It consists of 13 layers and each layer has been painted individually in relation to the colour of the object inside the picture. The background is painted in black whereas the bright colours are applied to the upper layers. The reason for this arrangement was to create an illusion of depth inside the painting and also to allow the colour to be visually thicker and appear as traditional abstract painting. This method that the researcher followed in his

digital painting is similar to the technique he has used with traditional painting with the differences confined to the materials. Responding to the influences by the British landscape, this painting has a strong relationship to what the researcher noticed. The large green part of the painting refers to the arable land which the researcher used to see during his trips by train and coaches. Moreover, the lower part of the painting shows the huge capture of the sand or desert referring to the researcher's home town. The researcher before starting this research worked as an art teacher in his country and used to commute for 70 miles every day. During this commute he had to cross the desert which greatly influenced his colour scheme.

With new technology, the researcher also wanted to link his search for identity to the complex working environment. Keeping daily records of personal interests and developments helped to establish a continuous exploration of this link. These diaries eventually developed into a form of artefact. Looking back into the journals and actual digital paintings, it was found that the images seemed to insist: you can look, but do not touch.

As mentioned earlier, the interest in depth came from the artwork with colour overlaid on a flat surface allowing viewers to feel that they have entered into the painting. Everything in the artwork has an individual story, which imitated the researcher's mood and condition. While working on screen he forgets about the limitations of this medium and feels that the colour and the screen expand to

surround him. This achievement of unconscious engagement created a powerful painting and strong vision.

Working digitally is a constant loop between creation and evaluation. Each time the researcher paints any images in his computer, he has to look back to the process he has begun and adjust the layers or balance the tone or colour of the object. This is a kind of self assessment and evaluation for each step that the researcher has taken.

Digital artists are nurturing the aesthetic meaning of their production during this cycle. It is a continuous feedback between creation and evaluation, between the emergence of forms and interpretation of meanings. When working with the computer artists are able to check, alter and tweak to see the final piece of work before it can be seen by anyone else. The painting could be scaled, rotated and transformed without any loss or damage to details which represents a function and facility for experimentation not possible to the same extent by traditional methods.

One other very important aspect of the creation of expressive art via the computer-based toolset is the reception that such artwork can receive within the artistic community. Digital painting to some viewers seems easy and this is a common misconception based around the fact that it is created by computer. People are generally much more inclined to accept an artwork that is produced

by hand and from behind the easel and canvas. The viewers are used to accepting an artwork that is painted by hand and they do not notice that there is an action process with digital painting. The computer screen refers to the canvas and the pen or the computer mouse can be taken to be brushes.

As with the autographic prints of the pre-photographic age, and with the later, multiple copy facility afforded by photography itself, there is an issue regarding the original master concept of a piece of artwork. This has been mentioned by the researcher previously in this chapter. Each subsequent copy or print taken from that original is altered in a small but measurable way from the original as there are physical interactive and surface-based processes involved. The practice of 'limited edition' prints in which, in some cases, the original is damaged or even destroyed in a bid to preserve the unique quality of a finite number of prints or copies first made, shows how important, to the art world the notion of the 'original' actually is.

Computer technology brings something new to this situation. Even within the semi-digital reproduction of newspapers and books by use of the half tone method, there are analogue variations possible and a noticeable degradation of image from the original to the copy. As truly digital creations, stored in computer memory as discrete numbers, paintings or drawings created on the computer can be copied exactly from one machine or peripheral device to another. The subtle and often unpredictable variations of analogue copying are

not present. Peripheral devices such as printers and film recorders can bring some analogue variance into output, but until that interface between the digital and physical realms is crossed the copies in digital form remain true to the original (notes by the researcher from John Burns, 2005). Whilst there has been long and vigorous debate about this situation it is worth mentioning it here as it forms part of the researcher's examination of how his work fits into the current climate.

This digital working environment is very different from that of the traditional studio. The artist sits at separate computer monitors and largely works in isolation and quiet. The atmosphere fosters intense concentration by the individual at the machine. The work done rarely involves touching canvas, though artists do test, evaluate results and often try again. However, with traditional painting the researcher was able to touch and smell the colour and modify his vision according to his surrounding element. With this digital equipment the researcher was controlled by the limitations of the screen and untouchable colours. In fact, the art is clean, introspective, rarely crowded, non-physical, and work in progress is nearly invisible to others.

This is another fact that influenced the researcher's artwork. With the traditional method he was able to move around the canvas and see his painting from different angles at once. But in this technique he was only allowed to check his work of art on the limited size of screen and in parts. Although he was able to

see a large painting on his screen and in detail the whole picture in actual size might be difficult. This forced the researcher to think about digital artworks that would express his needs and feelings without this limitation.

This medium is especially interesting when trying to adjust or enhance a colour; it gives the feeling of capturing the emotions in the painting. Technology was used not only as a service to aid this creation of form, but to aid vision of form, and this has the ability to aid studio practice. Using tools such as the colour palette, which consists of millions of hues, also aided the project. There was little fear of making mistakes with colour, since it was applied to many images and could be stored for long periods of time. Colour and hue were therefore integrated in order to attract viewers' attention into the multiple layers of the digital paintings.

The researcher through this tool tried to express his feelings in the same manner as the traditional method. He noticed while working in his lab that this digital production also has its limitations and that the artist, sometimes, cannot control all parts of his painting. Also the difference between the traditional painting and the digital painting is more in terms of the tool used. Moreover, the interesting thing that the researcher realized was that with new technology nothing ever stays the same and there is something new which will always appear. Thus, he developed his production to be involved into the animation environment which will be discussed in the next stage of the creative production.

It is worth mentioning the special features of the programs that the researcher has used and how they relate to each other and to the work that he set out to explore. The paint programs operate primarily on a 2 or 2.5 dimensional basis. As the researcher has mentioned previously, these programs provide a base, wet, working layer and a set of optional dry or transparent layers. In contrast to traditional painting methods that may use layers of wet and dry paint as created in a certain order, these layers may be re-arranged or made invisible at a later stage in the painting process. In addition there may be other transparent, semi-transparent and textured layers inserted between the working layers. These extra layers may work as optical filters in much the same way as varnishes and glazes may be applied onto a layered oil painting.

Studies have been carried out as to the optical effects of traditional varnishes in which the transmission of light, returning from interaction with pigments suspended in deeper layers of painting and travelling through transparent or semi-transparent layers of suspension are being altered at certain areas of varying depth to produce lens type effects. Differing thicknesses and consistencies of linseed oil, turpentine and other suspensions bearing either very few pigment particles, or being almost entirely devoid of them, may affect the passage of light photons entering and leaving the layer to a greater or lesser extent depending on the relative thickness of the layer and the angle of the surface as created by brushstrokes. These microscopically thin layers, traditionally accessible by x-ray or other type of chromo-photography or indeed,

by the physical removal of the covering layers, form an important part of the painting of a picture and also the viewing of a picture.

Whilst emulating the application of these varnish-type layers within the painting, and also attempting to replicate some of their visual effects regarding refraction etc the 2 and 2.5 dimensional programs do not allow the viewer to 'peep' around the layers and to look into the spaces between the layers of pigment and varnish.

Whilst we discuss these layers of paintings in both traditional oil painting, acrylic medium and even to a much more compressed degree, water colours, it is also good to note that many other methods of capturing, creating and holding visual information make use of layers. Filmic special effects in movie and in still form, for 35mm slide presentations etc, make use of bi-pack assemblies of emulsion layers clamped together to form masks or superimpositions for projected images. The optical printer technology, as widely used in the motion picture industry, makes effective and multi-pass use of the travelling together of aligned and synchronized frames of photographed and masked imagery running through an illuminated film gate to allow for exposure onto a receiving film emulsion. Within these transmitting and receiving film emulsions themselves are further microscopically thin layers that use granules of silver halide, their associated colour couplers and dyes, colour filters and general flare control or anti-halation pigments to interact with passing photons of light. Whilst in

popular culture much of this activity has passed into the digital realm in terms of still image capture, in movie recording and compositing, the concept and use of layering, particularly relating to light and colour filtering, is very much in evidence.

The researcher here reminds the reader of his earlier reference to Jackson Pollock's comments about being 'in the picture' as this will inform and relate to the activities that the researcher has been involved in using these softwares.

5.2.2.1. The advantages of Corel Painter 8

Among these enormous productions of computer software the researcher carefully chose the Corel Painter 8[35] application, which has many features and a useable interface. The interface [figure 5:14] can be used as a painting environment or as a practice tool for visualizing conceptual artwork. It becomes easier to increase the scale of any painting within the work. Bitmapped artwork may use interpolation of colour to achieve scaling and transformation as controlled by victor-based tools. Corel Painter 8 looks almost like traditional media, in terms of how brush, colour, canvas work together to produce the virtual effect, and also how these elements work together to show the painting on the computer. In addition, computer artists are able to record their paint strokes as a sequence of events and reuse them to create a similar painting in the

[35] Corel Painter 8 is a part of the Corel Company and was developed by the Fractal Design Corporation. It is graphic application designed to create a natural image in the artistic environment while using a computer. It allows the user to paint and edit his/her image and save it in a bitmap format.

future or to gain speed in repetition and creation of printed paintings. In Painter 8 artists can actively work on top of one wet layer and an unlimited number of dry layers. Each layer is represented as both a height field and a set of pre-pixel pigment concentrations. This feature helped the researcher to work in each layer individually to create special effects.

Moreover, the Painter 8 application represents paintings in terms of pigments rather than as RGB[36] colour and allowed the researcher to dynamically relight painting under any full-spectrum illuminant. Thus, the researcher was interested in colour field generation and the mixture of the pigments over the surface to modify the brightness and darkness, and hence the tonal range, of the painting. Using this software in the field of visual art allowed him to change and rechange the pigments at any time to explore different possibilities.

In general a greater number of colour ranges and complex colour gradations were produced than with traditional hand painting. These are mathematical colours that can be altered across huge ranges. As mentioned previously, using computer software has a direct effect on the final product in terms of appearance and provides direct interaction with the materials, as well as with the process of painting.

[36] RGB it means: Red, Green and Blue. Most computer software related to pictures uses this classification of colour to reproduce the colour into categories.

Furthermore, Painter 8 software has been developed very rapidly, and the version mainly used is privileged by the accessibility of the interface of the application. The interface is designed to be used by non- computer specialist artists. The user can pick up any colour and place it on the palette and mix it with other colours to generate the right colour for use. Also a user has plenty of colour types and simulated media from oil, water, and acrylic and so on. As well there is a large number of brushes and filters to apply over the painting to make certain effects. In addition, with new technology artists are at lower risk of injury or accident because the software allows artists to produce work without pain although use of computers over long periods of time can generate as yet undiscovered problems.

The researcher has discussed the benefits of various softwares that may be used for generating digital versions of layer-based paintings. The researcher has also mentioned the ever more readily available viewing and environment creation softwares that may be used to view such paintings. It is at this point that the researcher wishes to examine how these toolsets and elements may be brought together.

At this point we can briefly remind ourselves of some of the main characteristics of the software tools, and their traditional counterparts, mentioned previously; digital painting systems provide paint tools and palettes that try to emulate traditional media such as oil paint, water colour painting, pastel drawing and

many other techniques. They also have new features not present in traditional methods such as ‘Undo’ functions, mathematically huge and pure colour palettes, layers that can be switched about in order and the ability to make very many, totally accurate copies of paintings. These systems also have lighting effects and texture facilities within the layers to suggest varnishes, scumbling and transparent colour. Whilst producing predominantly flat, 2-dimensional images, at least as far as the viewer is concerned, these packages are actually 2.5 dimensional due to their ability to provide layering; these layers may usually be viewed as a composite image in which all the relevant layers are seen pasted together as would be those in a traditional painting. Vector based drawing with seemingly infinite resolution and size of the drawn mark are also usually included in some form to greater or lesser extent within these packages to add high quality layered drawings to the bit-mapped brushstrokes that make up the ‘painterly’ aspect of the tool.

2.5 dimensional painting, drawing and animation systems, sometimes referred to as ‘postcards in space’ blend each of the features mentioned above with time-based animation tools that can scale, move, rotate, re-colour and add progressive transparency or opacity to layers and their contents. Once more, the viewpoint usually assumed in relation to the resulting animations is one that we would call ‘normal’ as regards the layers. That is, the viewer’s line of sight would be perpendicular, at an angle of 90 degrees to, the plane of the layers. Creation of content is usually a mix of painterly tools, vector drawn shapes and inclusion

with manipulation of still or moving photographic material. As such software developed there was a facility included that provided what we may call ‘pseudo-perspective’-camera-viewpoints. These were ‘virtual’ cameras that allowed the viewer’s line of sight to move away from the normal and perpendicular aspect to the collection of layers gathered together on the picture plane. Swinging around the layers in horizontal or vertical configurations or combinations of those directions the camera could allow the viewer to peer around the edges of the layers. This type of view was used primarily by the artist to allow for tweaking of the arrangement of the layers before the final result was created for the viewer, who would perhaps not usually partake of such an oblique view. This leads us on into the next area of use for layers, views and lighting scenarios; film and video compositing.

As mentioned above, there are many visually based programs that make use of layering techniques. As well as emulating some of the layering procedures and methods as used in traditional painting, drawing and graphical techniques that have evolved through many hundreds of years in some cases, these programs have also added characteristics of their own. Whilst mainly resident in the areas of flexibility and breadth of available colour range; some of the extra characteristics produce unique possibilities for view manipulation that would not be possible in the ‘real-world’ even given the continuing miniaturisation of cameras and support mechanisms. One example of such a unique arrangement is in the use of layered digital systems within film and video compositing. The

researcher has mentioned previously how such machines as optical printers make use of layers of celluloid based film and masks to bring together sequences of photographed, painted and other types of imagery into film gates, often at high speed, such that transmitted light can register the composited image onto a receiving film emulsion. For a number of years if not decades now, such activity has been digitised and processed within computers. Component layers of image sequences stored as high resolution bitmaps can be brought together as layers in computer memory, together with their masking and special effect associate parts, and blended to form a desired composite whole image sequence. Further, as techniques have developed in image file structure, each image can carry with it its own masking and special effect information in Alpha and increased colour depth components.

The compositing systems can also, for operational purposes, generate views of the composite from in between the layers. Even fiber optic cameras of extremely thin diameters cannot, as yet, achieve this within the physical counterpart optical printer. It should be stated here that many of these view generation capabilities are included to facilitate operator options whilst the resultant view, or composite, is often still designed to be observed from a 'normal' aligned, flat-on viewing position. Principally, the layers of component image sequences are organised as flat, moving strips of film; they do not exhibit any dimensional detail away from their flat, x and y based plane.

Most recently the researcher addresses the next type of program in the collection that is outlined above. This type of program contains many of the attributes and characteristics mentioned above, including to some extent the paint facilities, but also includes cameras that may turn through microscopic circles, look back to where they have travelled from, move away from the major axes and planes in a vast array of directional and alignment configurations and bring focal lengths, depths of focus and of fields into a composited environment that contains non-flat surfaces and entities. Moreover the use of texture mapping within these packages relies on longitudinal and latitudinal coordinate based systems that allow for precise matching of images to the irregularly shaped surfaces that may be required to hold layers of appropriate visual information.

In all of this discussion we should take note of one very important element or aspect of digital artworks that allows us to introduce paint transparency into an image produced by use of a computer program. That element is called ‘alpha’ and relates directly to the glass planes on which an image, or part of an image, rests when being photographed by use of the rostrum camera. Unlike glass-based transparency that remains solid when allowing light to pass through, alpha information in a picture removes, mathematically at least, the solidity of that part of the picture itself (notes by the researcher from John Burns, 2006). Therefore, alpha information within a picture that is being explored by a tiny, virtual camera, can act as a portal or shaped gate allowing free passage to other

layers or levels. There are number of ways of generating into, or extracting from, a picture the desired alpha information.

Luminance and chroma levels, whether generated directly or painted into the image, can extract alpha details from previously non-alpha bearing material. These can provide soft or sharp edged cutting devices that enable the artist to create negative spaces in an image.

Passing through an alpha based portal to encounter not only other layers of one painting but to also enter into the realm of another painting at a deeper level, provides for precise and creative navigation. Camera travelling through these layers may also film light effects and projection that have been placed within spaces between the layers.

Differing orientation and depth of camera travel can facilitate a view not possible when using physical cameras. In this way a new z-depth based region may be generated and explored from pictures in which the background, foreground and middle distance have previously been foreshortened and compressed onto a 2 dimensional plane (notes by the researcher from John Burns, 2006).

5.2.2.2. Reflection of integrating digital technology in the creation process

Traditional methods of painting embed sensitivity to the materials, a thorough sympathetic understanding of structure and technique and a sharpness of visual perception, which later emerges as a humanizing influence on digital production and manipulation. Thus, both digital and traditional mediums were simultaneously used by this researcher, in attempts to explore, and blend the differences between the two styles. The researcher has the same experience through the use of new technology or traditional methods when making paintings. This is the case because the digital painting experience provides him with a direct interaction with the materials, as well as with the process of painting.

Creating depth inside an abstract painting and exploring the hidden layers behind surface and colour became a major focus of the artwork. Computer software and large-scale printers were used to produce this work, and with new technology depth became more accessible; it helped to create truly three dimensional visions and project them onto a flat surface or picture plane. This wider vision which may be explored using digital viewpoints can help the viewer to experience digital colours and tonal arrangements as seen from a number of locations within the painting.

From the interviews, which will be discussed in-depth in the next chapter, in digital painting it seems that viewers interact more with the stages of the

creation than they do with the finished artwork. They expressed a belief that they are more involved with work that touches their emotions and evokes their imaginations. This mental and emotional engagement breaks the limitation between the painting and the viewers' eyes in relation to their visual communication and with regard to the digital materials. Viewers become more interested in the creation process instead of the final appearance of the paintings.

Referring back to Frank Stella's concept of making an object come out of the surface to interact with the viewer's space (Stella, 2004), the researcher was influenced by his ideas and thoughts of the same concept that is of allowing his viewers to interact with his production with the aid of new technology. The researcher developed his artwork production and placed it in the kinetic art which covers both animation and 3 dimensions. By being involved in this type of production the integration between the work of art and the viewers will be strong according to the researcher's feedback that was collected from his observation and questionnaire.

5.2.3. Abstract multimedia installation

Technological advances have been applied to the arts as a new and expressive tool within the artists' studio, and while it was once thought that the effects of the inclusion of new techniques may have had profound and potentially devastating effects on the discipline (painting is dead), time proved it to be

otherwise. An Italian painter born in 1928, Alberto Sughi said: "*From then on, painting was no longer the only means of narrating, or representing, civil and religious history. First photography, and then cinema and television, because of the speed with which they are able to transmit images around the world, have replaced the role that was assigned to painting in the field of communication. Painting has lost its actuality; but its profundity, and the specific characteristics of painting are not identifiable, luckily, with any particular role. We can admire a work of art without necessarily having to refer to the social reasons for which it has been painted*" (Sughi, 2005).

New tools were explored and used in ways that could add to the range and depth of artistic expression. In this stage of the research the aim of creating a kinetic image was not in concrete form and much experimentation was made. The initial exploration involved changing the colour hue of images using Corel Paint Shop Pro software which provides tools for photo editing, creating web graphics, drawing, painting and animating. PSP takes image editing to a new level of functionality and ease of use. It delivers tools needed to easily capture, create, enhance and optimize graphic projects.

However, while working in this application the researcher found that this tool did not satisfy his need to create advanced levels of animated colour images. The level that he envisaged creating by computer was not reached. The researcher from his experience with animation thought it may be simple to

change the image's colour and that would cause the animation. However, while taking this research onto a deeper level the researcher found that recording the changing colour and adjusting the colour contrast was not satisfying his needs. After lots of experimentation with this application the researcher found this does not achieve the level of animation he imagined.

Thus, other tools had to be tested that might assist the animation project. The first moving image that the researcher created was produced via PSP and involved only the changing of the colours within his painting without moving any layers, elements or objects. This is one of the aspects that led the researcher to think of using more advanced software. Also this application deals with the picture in its entirety and cannot categories it into sections. It is not hard to work in different layers through this application and create the animation. The user is only allowed to animate the picture as one object. However, it is possible to animate each picture individually and then import them into another application to lime them together. This complex technique and long process led the researcher to search for another path.

At this point in the creation process, the researcher aimed to create artwork that further questioned the audience and work relationship in more detail. The audience therefore played an important element in testing and examining the value of the work. Their responses and interactions were considered key information in evaluating the overall production. The researcher was more

concerned about processes that encourage and permit open-ended investigation in which chance is as significant as intention. Therefore, some freedom in experimentation was necessary. Furthermore, more investigation was carried out with regard to the moving image. These experimentations led the researcher to consider Corel Paint Shop Pro software as being too limited for this project, and 3D Studio Max[37] was used to supplement it.

A series of experiments were set up to assess the potential of the program. The first exploration examined projecting light towards an opaque digitally modeled sculpture. After some exploration the researcher noticed that the viewers did not recognize the images as their eyes would only track the shape that the light was projected onto [figure 5:15]. Similar to Jennifer Steinkamp's projection of light onto a wall in her installation Stiffs, the researcher was aiming to attract his viewers by projecting images onto 3 dimensional shapes. The researcher's viewers were interested in the objects rather than the projected painting. The reason that the researcher used these 3D objects in his artwork was to represent his abstract painting through the animation world with the help of new technology. The initial responses to this animation could not therefore be taken as a good sign to continue in this manner which led the researcher to develop his ideas and explore the animation in more detail. This was due to the appreciation by the viewers which considered the modeled sculpture as of more interest than the projected paintings.

[37] 3D Studio Max is a 3 dimensional vector graphic application. It is widely used to create 3dimension objects and animation.

In the animation artwork carried out by the researcher for this project, the transformation of digital abstract painting into the 3D environment can be seen, as 3D images have been addressed as an essential part of the investigation. An effort was made to create visual experiences in an actual space and then transmit them over electronic elements into the 3D environment. Thus, the challenge that made the researcher more interested in such artwork was the shifting of his painting from two dimensions and placing it in a three dimensional environment. Marielc Nendecker, sculptural and video installation artist, points out that in her installation "The Sea of Ice" (2002), viewers can enjoy the potential of looking into a 2D painting and then rest in a 3D area which usually is reflective of a landscape painting. The artwork is no more stuck in the gallery and installation art viewers may envisage the illusion and artwork being released from a white cube.

This concept encouraged the researcher to develop his idea and move forward to a 3D environment. Therefore, the researcher created his animation in the 3D modeling using his 2D abstract painting. The researcher preferred to use his flat painting instead of building a 3D painting which led him feel that he still working from an artistic perspective and not from a designer's point of view. The crucial difference being that the artist is painting his feeling and emotions whereas the designer is designing the image not the painting.

Tony Kern, a motion picture artist, animated a painting called "Isle of the Dead", originally painted by Arnold Bocklin[38] in 1880 (Kern, 2007). Kern displays the constructed image in the middle of his animation and adds basic effects to it. He then combines this painting with a moving sky in the background and involves sound effects to add more impact and illusion to his artwork [figure 5:16]. This animation employed basic skills by moving one layer upwards from the back of the painting and adding a visual effect of colour. By controlling the brightness and darkness of the layer, the shadow over the objects in the painting foreground appears and gives the painting a different vision. It is obvious that the animation artist has aimed to include a great impact on the painting. The bright light from the middle of the sky and its reflection on the sea create a significant visualization effect for the viewer.

Unlike Kern, the researcher evoked animation technology to animate his own artwork, rather than someone else's. The intention was to create a complex animation that combined sound and moving images with light effects to enhance the audience's engagement with the animation and to tell the story regarding the emotional and cultural themes underlying the painting of the artwork.

The researcher believed that with computer-based art, audiences are no longer passive; they mingle with the artwork on a real-time basis by using a wide selection of commands—clicking buttons, activating links or entering search words in databases, for example. Installation artwork allows audiences of

[38] Arnold Bocklin is a Swiss artist 1827-1901.

varying physical abilities to explore scientific and artistic creation in ways that would otherwise be impossible.

3D Studio Max has the ability to control light within its transparent materials. Similarly to film, the process of increasing and adjusting the brightness of the frames makes the scene more or less realistic. Adding light effects onto the animated painting can increase the level of interaction with the spectacle. As audiences are influenced by colour and its hue, the contrast between bright and dark can create more interactivity. Hues of colour are often controlled by the artist to attract the viewers' eyes. Lighter colours, such as yellow and orange, appear larger than darker colours, such as blue and purple. The researcher controls his colour palette and he puts forward the colour he wants and pushes unwanted colour to the back. He manages the shapes and forms in his artwork through colour balance. These effects stimulate the viewers' perception of space and time. Viewers search their memories and experiences to frame their vision from a mixture of colour with frames and time bases to represent human emotion via colour and timeline.

Visual artist Muriel Magenta (1997), for example, creates a multimedia installation called "Token City" [Figure 5:17]. Magenta simulated the reality by transferring everyday life through images and sounds. Emotions and thoughts involved with the subway to immerse the viewers in the artwork. This piece is one component of a four part project including a 3D animation video short

combining visuals and sound. "*Viewers to the gallery will enter a virtual subway platform and encounter a series of video projections and multiple soundtracks which merge real people videotaped in transit with a 3D computer-animated subway station. This computer-generated scene includes rows of riveted columns, iron staircases, and old tiled walls, coexisting with streamlined subway cars. While waiting for arriving and departing trains, viewers experience a choreographed program of electronic music and digital sound effects composed specifically for Token City. Paralleling subway activity, the Token City installation is continuous throughout the gallery day with people coming and going as they please*" (Magenta, 1997).

Installation art, such as Magenta's piece, is blurring the boundaries between art and life. It also challenges the traditional methods of viewing art, demanding a greater level of engagement in the communication between artist, artwork and the audience. The artist creates the environment within which the viewer will be able to play and test with possibilities. The development of technology and new artistic media helped installation artists to execute their concepts by using them.

Human bodies and the environment itself become potential sites of installing artistic concepts. In 2004, light installation artist Michael Iorio projected coloured lights at a building from different directions from the floor. The moving light gave the installation more impact and had more effect on the

passing viewers. Such installations, however, cannot be truly evaluated without viewers' feedback and interactions.

Shelly McGuinness, a mixed media installation artist, created artwork by using simple materials and basic mechanical devices in 1998. McGuinness tried to absorb the viewers' attention and encourage a meditative approach. As with Michael Iorio, Shelly McGuinness and other artists whose concern is with involving the audience in their work, the researcher also felt that his installation could not reach its potential without some viewer interaction. Significant aspects of the artwork depend on the viewers' responses to the images in the installation.

A use of more advanced and complex technique was applied by involving the camera movement within the creation of the artwork. The researcher worked in each layer and on each object individually and tried to make the camera's viewpoint behave like an eye, which yields the strongest sense of natural access to the depicted images.

Moreover, by using camera techniques, the viewers' attention may be drawn to various elements in the production of the work. That becoming a part of the work was a key point in the researcher's intentions in art. Thus, as the main element of the artwork, audiences were involved in the researcher's production.

The researcher keeps the loop of practical development of his art production. With regard to the researcher's interest in creating the illusion of depth through the painting's layers, he experimented on this part of the painting with moving the layers to test the animation. In 3D it can be possible to animate each part of the painting in a separate direction. Thus, the researcher classified his digital abstract painting into layers using Adobe Photoshop. Photoshop application helps the researcher to change the layers to transparent layers. This technique is similar to the use of rostrum camera technique but the difference here is that the layers of the paintings have to become transparent. Also 3D Max allowed the researcher to adjust the painting's layers rather than applying extra layers to the painting.

In this technique the researcher observed that his paintings contained a landscape view which led him to move the layers in a different direction to shape this thought. This idea encouraged the researcher to focus more on his analysis of each painting to show a new concept from his painting.

The researcher's work takes no fixed viewing angle, vertical or horizontal; an observer views the whole image and directs his or her vision towards the area of interest; the viewer is witnessing the moving image; remaining fixed and at the same position. The viewer does not need to move his or her head or change the line or angle of vision. The image will flip and rotate to take the gaze into the long journey between layers and colours. It would not be possible to create these

features without new technology. This can be seen one of the great advantages of using computers in art. Thus, the way of viewing the researcher's installation is fundamentally informed by technology. This artwork has been created to let the viewers understand it by their experience and their exploring of their centre of interest.

There is an ongoing and seemingly increasing need for paintings to be shown in televisual form for inclusion in television, multimedia and internet based programmes and collections. The recent made-for-TV series 'A Picture of Britain' included innovative camera tracking, depth of focus and wide-angle lens techniques to allow the viewer to feel that the surface of the landscape paintings that the camera was dollying and zooming in towards was actually a three dimensional, relief based surface with heights, depths and distances somehow present within the painted surface (Dimbleby, 2005). Whilst it may well be true that there are indeed some relief features in the painted surface, these are paint and varnish attributes, brushstroke details and indentations rather than the true depths beyond the picture plane that the camera work tried to suggest.

The researcher mentioned previously how the rostrum camera or animation stand, also linked to the multi-plane camera, could track, dolly and zoom into separated and individually cranked glass plates to suggest three dimensional depth and distance cueing of the painted layers of images placed on those plates. Again, using dolly and zoom controls the camera may suggest that the viewpoint

is moving into the picture, crossing the picture plane itself and allowing sections of the painted world to enclose the camera from behind. Such is the technique of selective viewing as made available by the controlled viewing cone of the multi-plane camera. Some 2.5 dimensional paint and vector drawing systems emulate this technique, even allowing the camera viewpoint to swing into lateral planes to look along the plane of the layers of the picture. These are pseudo-perspective views that, whilst very valuable for compositing and moving image setup, have limited control and do not constitute the final normally aligned view of the scene. These 2.5 dimensional packages are sometimes referred to as 'postcards in space' and are indicative to a greater or lesser extent of many digital drawing and painting packages in common use today (notes by the researcher from John Burns, 2006).

If we imagine that there is a way in which a very small camera may be placed within the layers of a picture and that camera may be able move at will in various directions through those layers and their interstitial spaces, we can see that there may be a way to explore paintings from within. That is, we may pass through the perceived picture plane and move through varying levels of pigment to explore previously hidden depths. As the researcher has previously mentioned, there are physical and virtual cameras in rostrum configurations and 2.5 dimensional virtual form that can suggest this to some degree. A truly microscopic camera travelling not only with its image recording bulk but also with its directional aim point would not only be able to pass through layers of

pigment and varnish but, would have the capability to look back to where it had come from. Passing through non-pigmented areas of any layer, which a rostrum based camera could never do, the tiny, virtual camera could navigate its way through portals between brushstrokes of colour to physically enter realms within the painting in a way that is impossible for the traditional rostrum camera to do.

Even with fine motor control, smooth gimbal actions and the corresponding bed movements of the animation stand it is not possible for a camera mounted on such a device to pass through the picture-bearing glass plates of the photographed area.

If, by some means, those physical cameras could actually pass through the plates their turning circles would necessarily be so wide as to render any meaningful manoeuvre impossible. Virtual 3 dimensional cameras moving within a digital version of a similar construction carry their mathematically tiny film bodies, together with their target and look-at points through such spaces and employ extremely tight turning circles, tilting and panning actions to look into vistas within the painting.

Relatively recent developments in mini and micro camera technology with wireless and remote contact have allowed viewers to look into very small spaces within machines, organic structures and archaeological artefacts (Goldner, 2006). Even so, these very small cameras often require extensive support

structures and are often designed directly with reference to the environments they will enter as in the case of medical exploration cameras.

The important thing to consider now, once we have considered the beneficial points of the 3D virtual camera within a digital program, is how the researcher can bring the camera and the painting into the same environment. This is an important issue that the researcher focused on during his implication of camera technique in his creative production. He used the virtual tiny camera between the paintings' layers to show the hidden views that disappear with traditional painting and printed digital abstract painting.

Old masters of traditional painting used varnish between layers to move beyond the flat surface (Whitten, 1997). Also referring to the abstract painter who dissolves the limitations of the picture plane by applying different techniques to engage the painting in the viewers' spaces, the researcher creates his 3D animation from his flat painting to attract the viewers virtually and take them inside his paintings.

In his installation, the researcher addressed something new to the audiences of abstract painting. He shifted their attention from the interpretation of the abstract work to the process of creating his animation. The researcher found out that this is an interesting point that he made in the animation community. Moreover, during the show of the researcher's installation, which will discussed in the next

chapter, he noticed that most of the audiences were exploring the process of the production and then the abstract painting. In addition, this installation enhances the viewers' vision of abstract painting.

With the aid of computers, the artist's process of creating the final piece of work can be recorded. The art world is often extremely interested in the process used to create a work. Unfortunately this is usually very difficult to determine by looking at a finished work. For example, while a skilled painter or art historian can often tell the order in which portions of a painting were created, it is impossible completely to peel back each brush stroke of a masterpiece to see what lies beneath. Pablo Picasso, for example, created eighteen prints of eleven different states of his lithograph stone. Some art critics find that these print makings are interesting. Daniel Keete (2001), for example, believes that each of the eighteen prints is a record of the state of Picasso's stone. Moreover, by investigating these artworks, a deep understanding of Picasso's technique and intellectual standpoint can be observed. This technique followed the traditional method of painting as a record of the span of time and moment which cannot show any stages of the process of making. However, referring back to the previous chapter the digital artwork production can show the stages of the work as well as it is possible to represent the layers of the painting separately. This as mentioned earlier can be considered as one of the major advantages of new technology which may help the artist to reengage with and work again with his/her artwork in the future.

This research project kept these details in mind, and a multimedia animation scene was created in order to involve the viewer in the stages of developing the final piece of work. Viewers are presented with the invisible layers underneath the finished piece, and this cannot be seen without new technology. Furthermore, the audience participated in the artwork only by viewing and testing the final piece of work in the exhibition; thus every exhibition is a test. The audience targeted ranged from the artist and researcher himself to any people interested in art and technology with regard to abstract painting. Regarding the methodology, a more qualitative approach was taken whilst conducting research for this project.

5.3. Reflective Journals

Reflective journals are some of the most significant resources in practice-based research. They are used to record ideas, thoughts, experiences and the working process. These diary-like tools provide ongoing support for maintaining, adjusting and experimenting with a creative work. Journals provide a logical means of documenting learning and collecting evidence for self-evaluation and reflection. Greek artist Dr. Angeliki Avgitidou (2001) supports this idea and points out that the development of diaries in artistic practice has become part of the art practice itself; they are not merely reflective tools. All details kept in the record might add value to the progress of the production of the artwork.

The personal journal allows the painter or designer to reflect on personal experiences in the context of specific ideas. The keeping of journals encourages habitual expression of thoughts, ideas and insights in writing and focus on emotion and personal thoughts. The aim of this section is therefore to examine journals as aids to reflection and further explain and highlight the development of the researcher's artwork in relation to them.

Journals became an integral part of this research project and were essential to the start of practical production. They enabled the researcher to find a personal identity and to escape, or make sense of, the idea of displacement. In his diary, the researcher was able to engage with the development of the artworks. This dialogue included investigations into the artwork of artists whose work is similar or is drawn from related experiences.

The process of journal writing began by noting every remarkable change that occurred during practical production, as well as whilst reading about relevant artists and artwork. Thus, the journals consist of two parallel strands of thought. First, they contain information relevant to the development of his artwork; and second they provide the statements and significant admonitions from other artists and audiences, which help to adjust and enhance the artwork.

The researcher kept all the ideas and thoughts that came to his mind after realizing that the first method, which contains artwork relevant to his, was more

helpful and supportive. It opens up possibilities to draw initial creative thoughts, and change and improvement can also be easily followed. Throughout the journal there are short jottings and abbreviations of descriptions for sketches and hand drawings. They involve the researcher's creative process as well as how viewers may see the sequence of the artworks. Overall, the writing juxtaposes the images.

Inspired by the other artists' digital works, the researcher also sought to examine many forms of digital art. In doing this, he decided to show how the small diary might impact and adjust the large print of abstract painting. And he then used the ideas and thoughts from the diary to explore the potential of the computer. From journal two (2004), for example, the painting "Holy Place" [figure 5:18] shows a valuable and significant explanation to the artwork. In the painting "Abstract 16" the researcher refers to another Arabic artist who uses similar elements and figures in his paintings. Writing down the process and changes of the works is important in order to produce artwork that has references. More significantly though, keeping a diary also helped him to answer some of the questions that have been raised in his mind whilst working. Some of these include: What are the elements, colours and texture of the painting?; How do these interact with each other?; What emotions do the paintings evoke?; Why have I adjusted and merged these figures together?

But ultimately, this process of recording questions, actions and steps of producing artwork allows him to communicate with himself to evaluate relevant ideas. Journal writing is essentially a self-criticism, a means to capture feelings, thoughts, emotions and spirituality.

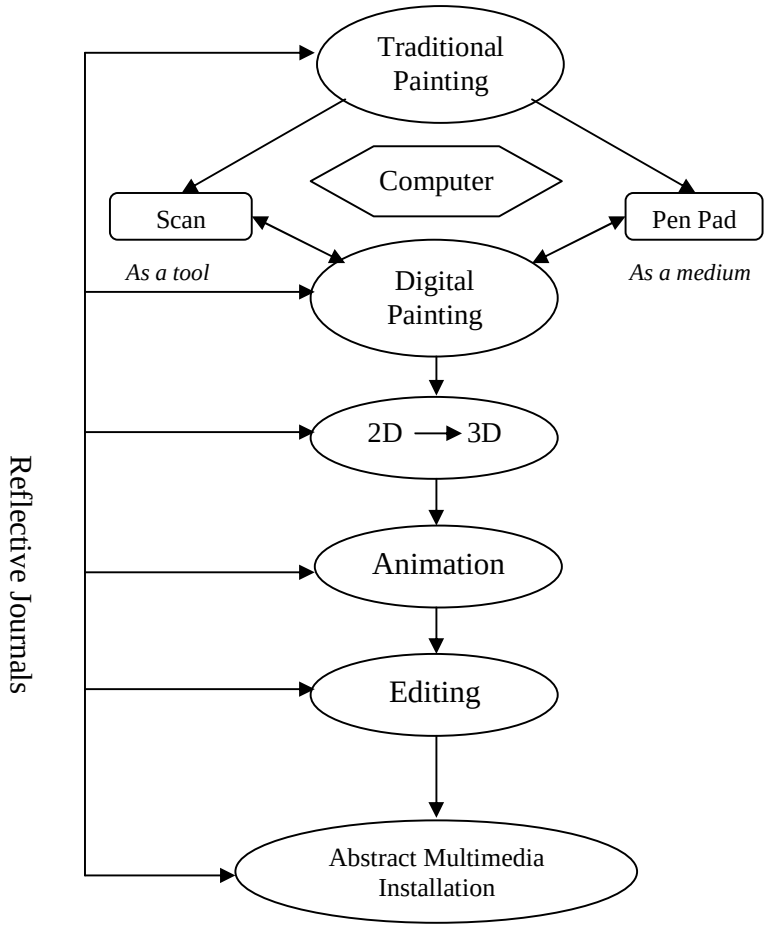

Diagram 5: 2

Reflection journals diagram

This diagram [5:2] shows that the reflection upon the whole project is a kind of linked cycle in which each step is affected by the one before. It begins at the initial point which was the production of traditional painting and the starting

consideration of using computers in the creation process as a tool and as a medium. It also considers how the impact of the computer on the traditional painting led the researcher to produce digital abstract paintings. Because the evaluation and reflection influenced the creativity the digital abstract painting was transferred from a 2D into a 3D environment. The next development step was making the animation of an abstract painting and then adding the sound track to add more effect to the perception of the animation. Finally, the abstract multimedia installation was produced with the reflection linking all the stages together, gaining from the previous steps and feeding into the next step.

Reflection involves looking back on experiences and it helps us to reconstruct, analyze and evaluate what has happened in the artistic process. When used in art, reflection can serve as a way for artists to learn more about things that are largely known in some sense but will give them deeper meaning. Thus, with journal writing, these mental reconstructions are converted into written form. The use of the journal is an ideal place to record the reflection. Moreover, a reflective journal develops the reflection progression. Alongside the development of practical methods and short conversation notices, there has also been a parallel process of development in the diary, which influences the action and practice.

An ongoing diary is the key component of the research and enables the artist to pursue his records, thoughts and creative impulses. The researcher therefore met

many digital and traditional artists in the United Kingdom and Saudi Arabia whose experiences and comments were recorded in his diary. This act of recording was an attempt to collect their experiences of migration from different parts of the world and sense of displacement within their new worlds. Later, when exploring areas of new technology, he developed these diaries more effectively into a form that stood as a main plank in his creative work. These diaries record the time as a form of documentation and stand as pieces of artistic expression. Spanish surrealist Salvador Dali (1904- 1989), for example, particularly inspired the researcher, as he documented his work so creatively. Dealing with new technology, Kenneth Huff, a professor of visual effects, shows that an electronic diary is easier to adjust or manipulate from time to time (Huff, 2006). Huff also shows the necessity of journal writing for artists.

Other artists' journals can often be read as stories. These colourful daily records are very inspiring. The researcher could relate the faster distribution of a daily record using machine reproduction, and the quick-to-apply-by-hand acrylic, with the painting created in computer, which is equally fast and easily accessible.

The deeper understating of the research influenced the researchers' thoughts and imagination as an artist while he was engaged in gathering daily notes. The improvement of his creative artwork and engagement with new technology has been a process that is linked from his life as an artist to experiences of the world of art. Experimentation and developments in abstract painting allowed him to

justify the leap that was made between new technology and traditional methods of painting.

5.4. Summary

This chapter contains various stages of the practical production of this research. It covers the traditional abstract painting process. It also covers the process of creating digital abstract painting. The differences between digital and traditional painting was addressed in relationship to materials and process. The last part of this chapter is covered in the process of creating abstract multimedia installation.

The researcher distinguished his artwork production from other installation artists by inputting significant and unique elements into the installation. He used the computer as a painting tool in order to create a visual combination of various painting techniques and different approaches to a subject. To achieve this, the researcher used a powerful application, Painter 8. *"The blank page gives me the same reaction as I had towards a new canvas, and this software gives a real sense of the hand creation of painting and shows the exact hue of each material pigment, which has been imitated from real life"*(Maghrabi, 2005). In fact, due to the development of software application and its interface the artist felt that s/he is using conventional materials and is not afraid of 'making a mess'.

To sum up, the transformation that the researcher has carried out here can be seen as a contribution to the explorations, experiments, trials of the possibilities that the computer technologies can specifically afford to the visual arts and abstract painting movement in particular, by which we mean that which comes to mind when we say ‘painting’ as art produced on a surface such as paper, canvas, etc. with shapes and colours. It is experimentation with a contemporary, relatively new tool in this area.

Similarly to the cinematic transition method, the researcher made a scene consisting of a sequence of shots. Each shot is made from a different camera perspective and then joined together by camera moves and editing techniques. The joining together of the individual shots to make a particular scene is accomplished via filmic and video editing transitions as made available via digital technology as it emulated traditional methods that have been touched on earlier.

The type of transition that the researcher employed, dissolves, fades and uses time-based additive mixing, where the overall value of the scene increases or decreases across a range of tonal hues as one frame sequence meets another. Fade to black for example may indicate the end of the sequence or time passage. When one scene fades out as another scene fades in, that is a dissolve is used to effect transition in keeping with the pace and subject matter of the artefact.

The whole process is considered by the researcher as a development of stages from one step to another. Using the reflective journals method helped the researcher to evaluate his artwork production in each stage and to make any improvements that were required on reaching the next step. Journals recorded all the researchers' actions and thoughts to criticise and evaluate his artwork production.

Keeping this material in mind, the next chapter will cover evaluation and feedback, which was gathered from trips to Saudi Arabia and Dubai Media City.

CHAPTER SIX: EVALUATION

6.1. Introduction

Reaching a deep understanding of social phenomena within the context of the participants' opinions and experiences can be gained through a qualitative research method. This category of research is more flexible, responsive, and open to contextual interpretation than other methods of information gathering. This chapter starts by evaluating the feedback that the researcher gathered from his questionnaires and conversations. The researcher divided his collected information and feedback into stages. This is not a statistical analysis of the gathered feedback and opinion rather it is a description of the audiences' comments and opinions.

Firstly, the researcher exhibited his final artwork installation in the United Kingdom at the Lanchester Gallery at Coventry University 2005. The initial purpose was to gauge the viewer's reaction towards the animation of abstract paintings. It was also to collect significant opinions regarding the possible improvement and the enhancement of the installation.

Secondly, the abstract new media installation has been developed and adjusted according to the researcher's point of view in relation to the viewers' responses. In this stage the installation was shown at The Fourth International Symposium

of Interactive Media Design in Turkey 2006. Thirdly, the final version of the main installation has been exhibited in The First Saudi Innovation Conference in Newcastle upon Tyne at Newcastle University 2007. Questionnaires and conversational notes have been taken during these exhibitions as well as from individual meetings and observations.

Merriam (2002) in her book *Qualitative Research in Practice* pointed out that the qualitative research method is an attempt to describe your visitors' opinions, attitudes, perceptions and feelings. Moreover, by evaluating your interpretation the researcher should be able to examine his findings and to consider whether it is working or not.

6.2. Participant's feedback

6.2.1. United Kingdom show

The main installation has been exhibited in various places. The researcher showed his abstract new media installation at the Lanchester Gallery at Coventry University in 2005 as preliminary step of evaluation for his production. The most important purpose in exhibiting this animation was to discover the response of interested visual arts' audiences. Conversational and anecdotal comments were collected as significant feedback to alter, develop and to improve the production.

The show was visited by many audiences, specialists and non-specialists in the field of art and design. Therefore, the researcher was concerned to have the response from both artists and non-specialists to gain different feedback which might help the researcher to develop his artwork.

Francis Lowe is a computer graphic lecturer at Coventry University. He engaged emotionally with the show and felt that the animation surrounded him with colour and gestures. He pointed out that the researcher fractured the boundaries of the limitation of the painting's frame by challenging the screen of his computer to deliver a new movement in seeing abstract painting. In fact this feedback made the researcher more confident because the viewers noticed and remarked on his concern. Breaking the limitation of the frame of abstract painting was one the researcher's aspiration to come up with a new vision of viewing abstract painting: *"The delivery shows sensitivity to your audience. There is a living, gestural sense to the movement that accommodates the viewer. You have also successfully managed to convey a presence outside the boundaries of the screen which is the challenge facing any artist who uses the screen for delivery"* (notes from the visitor book, 2005).

Dr. Rolf Gehlhaar (2005), design and visual art Senior Lecturer at Coventry University, stated that the progress of the researcher from handmade painting to moving images is remarkable and very well controlled: "*Massive progress in your work – in many instances you have mastered the art of painting with light,*

not easy and the beginning of wonderful works to come" (notes from the visitor book, 2005).

Adam Rugg (2005), IT & Media Services Manager at Coventry University School of Art & Design, says: *"Your work for me treads a fluid boundary between freedom and geometric pattern, form and impression. The qualities of space, light and dynamic tension are well balanced and evocative"* (notes from the visitor book, 2005).

Professor Andree Woodcock (2005), Director of the Design & Ergonomics Applied Research Group at Coventry University, noticed that the quality of the colour and the light was highly appreciated and she wrote in the visitor book: *"This was a delight. I really liked the quality of the animation, the translucence, subtlety and quality of the light and colour. I would have liked to have been able to immerse myself further in the production and feel the effects wash over me. Perhaps with surround visuals or on the cutting. Also I am intrigued by how you came up with this idea from the art work and representing them in the form of an animation"* (notes from the visitor book, 2005).

These are some comments that the researcher gathered during his show at Lanchester Gallery at Coventry University. The researcher very definitely considered this feedback to be significant opinions from the audience that could help to adjust and to promote further development in his artworks' productions.

Moreover, the initial feedback provided the confidence for the researcher to carry on with his vision of improvement concerning the accomplishing of a unique new media abstract animation: *"Interesting use of process, I like the mix of time-based imagery with sounds and how these related to each other. Vividness of colour with vivid sounds, and effect on the emotions"* (notes from visitor book. Bob Dixon, 2005).

6.2.2. Questionnaires

In the qualitative research method a few samples are usually involved using questionnaires which can be filled in by the interviewer or by the visitor. These questionnaires can include open questions that afford insights into opinions, feelings and perceptions: for instance, what are the advantages and disadvantages of using certain sounds with this abstract animation installation?

However, closed questions that can be coded and treated statistically are another type of qualitative research method: for instance, 'on the following scale how would you rate the answer that reflects your view; 1 indicates excellent whereas 5 indicates weakness'.

The researcher used both categories in his questionnaires to collect as much feedback as he could from the viewers. An audience's opinions and feedback is one of the most important elements of the research process. The researcher

believes that the more feedback is collected; the more was added of significant value to his installation.

The evaluation process was divided into three sections. The first part contained the notes and feedback from the researcher's show in the United Kingdom. The second section covers the analysis of the questionnaires from the United Kingdom and Turkey shows. The third part includes the analysis of the Saudi Arabian show.

The researcher has concentrated on three fundamental aspects regarding his production. Firstly, the technical quality of the creation process. This includes the resolution of the images in the installation; also how the researcher used the appropriate software to satisfy his needs. Moreover, this also included gaining opinions about the technique that has been used during the creation process.

Secondly, the researcher covered in this part of the questionnaires the appropriateness of the sound with the speed and the duration of the installation. Colour intermixture and its effects between the scene transitions have been very valuable features of feedback to the researcher.

Thirdly, this part of the questionnaires relies on the visual communication between the viewers and the animation of the images itself. In addition, this section addresses how the researcher expressed his emotions and ideas through

the journey between the layers. This was important at this stage. Also the researcher was fascinated by knowing how clear was his idea behind this installation and how the creativity explored personal expression through digital technology.

6.2.2.1. Turkey show

As a next stage of the evaluation process the researcher showed his new media abstract installation in the Fourth International Symposium of Interactive Media Design at Istanbul, Turkey 2006. This symposium is considered to be an annual meeting platform to discuss the ongoing advances in the field of interactive media design, new technology and techniques in the industry and their impacts on culture and art. This is an international symposium which started in 2003 and covered the entire topic relating to the digital technology, digital art and fine arts. This symposium included all the aspects which enhance knowledge, improve skills, and generate new ideas and opportunities in the field of art and design.

The researcher's work has been shown in the section of Digital Art and Multimedia Exhibition. This symposium deals with new technology issues and their influence on the field of art and mainly concerns itself with painting and digital animation. Most of the participants are from different countries and from different fields. This event was a significant step for the researcher to be able to examine and gather feedback from the specialists in the field of art and design

from across the world. The majority of the audiences were from European countries and they were interested in digital technology and particularly in the interaction with this tool.

The researcher took this opportunity to gain lots of valuable opinions from both students and professionals regarding his show. Questionnaire-based methods of evaluation were being taken during the show to gather the viewers' reactions and opinions. 30 questionnaires were picked up randomly to gain feedback on the new media installation in relation to the specific criteria.

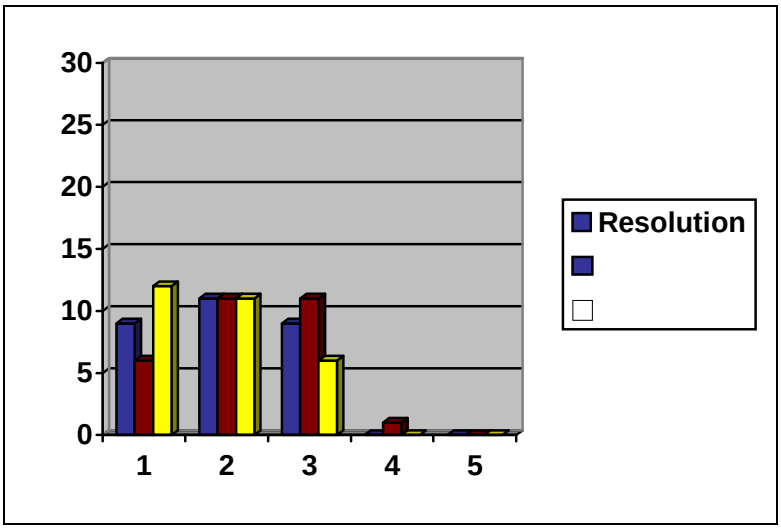

Diagram 6:3

Technical quality diagram

Diagram [6:3] shows the number of people who responded to the installation show with regard to the technical quality. 30 participants were involved in this questionnaire. The rating scale from 1 to 5 shows the viewers' answers which

reflect their opinions and views. Scale 1 indicates excellence whereas scale 5 indicates weakness as they perceived it.

The diagram [6:3] shows the viewers' opinions of and reactions to the technical quality of the installation. The viewers input in this diagram gave the highest rating to the appropriateness of the technique that was used to produce the work. 40 percent considered this technique as an excellent one that achieved its criteria, whereas, 20 percent considered the scale to be good.

The resolution of the images gained a 30 percent rating. This low percentage was caused by the appearance of the installation. The show took place in a bright location and was hung behind brightly lit windows. Also the small scale of the screen may have affected the viewers' perceptions and thus feedback.

From diagram [6:3] it can be gathered that the majority of the viewers rated this installation as very good. Moreover, using the suitable software and the technique were appreciated by the viewers in general.

These responses were considering the technical aspects of the work and whilst being an important part of the overall visual experience, did not directly address the emotional and aesthetic aspects of the encounter. However, it is given that the technical elements form an important plank in the building of the structure of artistic communication.

In general it can be assumed that the responses found the installation created by appropriate technical procedures which led the researcher to interpret his feelings and emotions through suitable software.

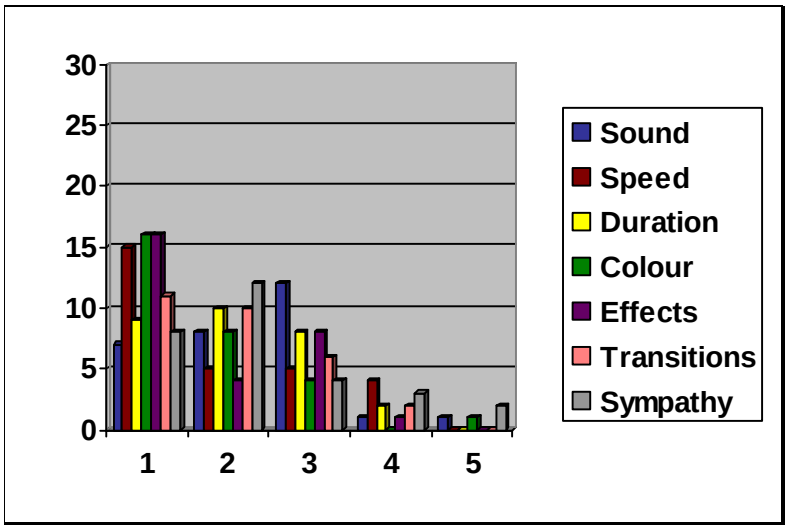

Diagram 6:4

Artistic Vision

This diagram [6:4] presents the viewers' reactions to the perceived artistic vision. The viewers placed their feedback in this section regarding the suitability of the sound as it added to the installation as a kind of audio effect. Also the speeds of change of the scenes as well as the duration of the whole show were considered. The colour intermixture and its effects have an excellent rating amongst the other criteria. More than 53 percent of the participants liked the transitions between the scenes, whereas, only 6 percent disagreed with the effect of sympathy between the work elements.

The majority of the viewers considered the elements of the artistic vision which the researcher used to be successful. The diagram [6:4] indicates that the conglomerate of the scales is concentrated on the appropriate achievement of a high level of satisfaction.

The colour and the effect of the filters, transitions, maps and masking, that have been used in the creation process of this new media installation were appreciated and have excited the greatest concern on the part of the audiences. These opinions provide evidence that the show was run and perceived successfully.

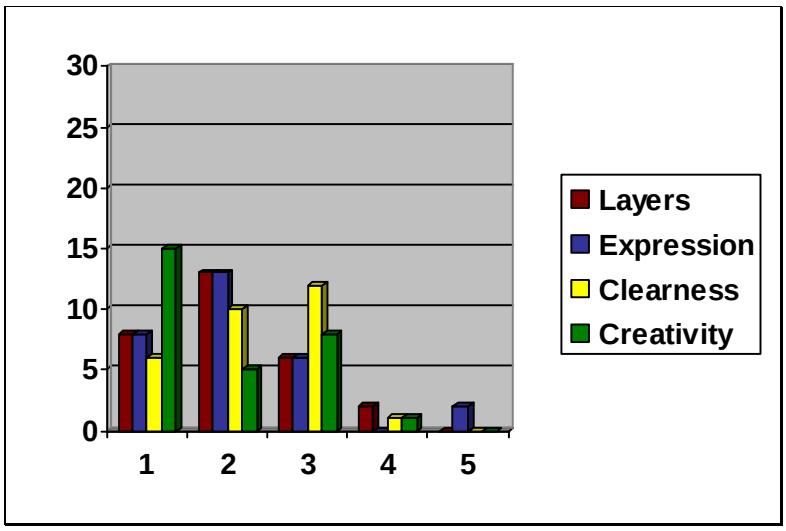

Diagram 6:5

Visual communication

Diagram [6:5] shows the percentage of the participants' opinions about the visual communication elements. The vast majority of the viewers indicated the largest column to the creativity of the artwork being of an excellent standard.

They explored the efforts that the researcher had taken throughout the creation process to express his personal idea through the digital medium.

Being involved in the work of art and being part of it, encouraged the participant to explore the installation in detail. The audiences explored the layers and moved beyond the hidden surface to be in full engagement with the show. Thus the feedback gained from the audience interpreted their involvement and interaction with what they had seen. This achievement by the audiences led them to wonder about the researcher's feeling and expression while creating this animation in terms of both the rationale and emotional impulse behind the creation process and the clarity in the expression of his idea.

Furthermore, 40 percent of the viewers expressed engagement with the researcher's idea lying behind the installation. In addition, almost double considered the journey between the layers of the installation was clear and interesting. By and large, the diagram shows that the viewers' reactions to the installation were positive and involved in terms of the exploration and investigation of the hidden concept residing under the moving layers and surrounding sound.

To sum up these three diagrams, it seems that the participants evaluated the production as a valuable artwork which can be clearly seen from the declining measurement of the scale. Each component has a very particular shape for its

category. This alteration depends on the interest generated. Thus, the viewers applied their opinions and feedback to the show according to their interest and experience.

6.2.2.2. Saudi Arabian show

This is the third stage of the evaluation process that the researcher made to assess his artwork production. The researcher exhibited his multimedia abstract installation in the House of Artists in Jeddah, Saudi Arabia 2006. The House of Artists is an official art gallery located in Jeddah and it belongs to the General Presidency of Youth Welfare in the Kingdom of Saudi Arabia. It is a very well known art gallery in the western part of Saudi Arabia and hosts conferences and seminars around the year as well as workshops. This gallery is normally visited by artists from all over the world and is famous as a contemporary art gallery. The main purpose behind the researcher's intention to show his installation in Saudi Arabia was to see how Saudi audiences would accept this kind of art production.

Questionnaires and conversations via interviews were applied to this investigation. A random selection of artists had been selected to fill in the forms. With the same criteria the researcher asked the participants to respond to the show according to their opinions and experiences.

Diagram [6:6] shows the number of the audiences' reaction to the installation. The vast majority of the viewers considered the resolution of the images were of

a high standard. The image resolution consists of the number of pixels displayed per unit, pixels per inch[39] or dots per inch of printed length in an image. This is a measurement used for digital images that appear on the screen of the computer.

Moreover, the resolution of any image affects the perception of the audience; therefore, the researcher was concerned about displaying his new media installation in a dark space offering his audience a better resolution. 80 percent of the viewers have given an indication that the resolution of the installation was at an excellent scale.

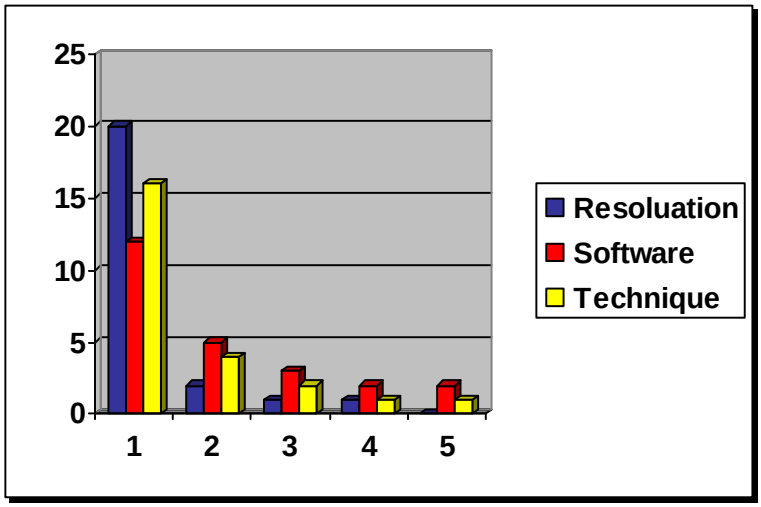

Diagram 6:6

Technical quality diagram

On the other hand, the appropriateness of the software used in this installation has been given only 48 percent. A high number of the respondents regard the impact of this installation as being attributed only to the software that was used

[39] Ppi or dpi: it mean pixel per inch which is a measurement of digital image scale.

in the creation. It was, however, assumed that the implication of 3D Studio Max as the main software to produce this multimedia installation was strongly appreciated by the viewers in Saudi Arabia. This may be because the show was the first 3D animation exhibition in Saudi Arabia.

As is indicated in this chart [6:6] the rest of the evaluation scales did not reach 20 percent according to the participants' opinions. These results reflect the audiences' exploration and experiences. In fact, the variation in the participants' feedback shows that the artwork has been perceived from different angles according to the viewers' experiences. Some of the viewers had seen the installation as being in space with planets moving around each other. However, another viewer saw the installation as a moving, pre-birth, baby inside a pregnant woman. There is a huge drop in this chart which can be considered as a significant advantage to the researcher.

Comparing now the technical quality diagram [6:3], the viewers in Saudi Arabia believed that the quality of the creation was good and it was highly appreciated. This is because, as the researcher thought, in Saudi Arabia showing something created by computer is new and astonishing. However, in Turkey's results the viewers believed that using this tool to produce artwork are not entirely new which was also reflected their feedback. Using a computer to produce artwork is not unique in Turkey. There are numbers of Universities and Colleges for

multimedia and digital design whereas in Saudi Arabia it is still rare to find any University for digital media.

Moving on now to the next evaluation diagram which is concerned with artistic vision. Diagram [6:7] shows how the number of the people responded to the composition of the artwork production as a whole piece.

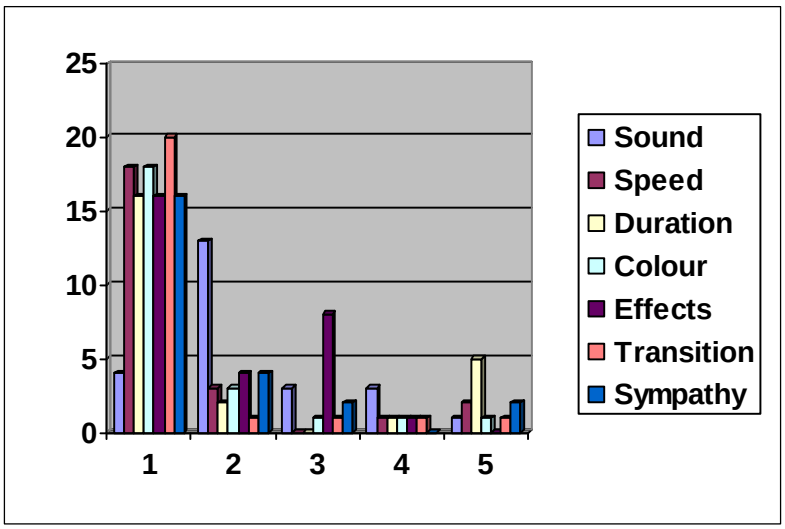

Diagram 6:7

Artistic Vision

Audiences gave the highest scale to the transition between the scenes of the installation. This means that the merging and the mixture of the scenes were smooth and sufficient. Like the previous diagram this graph shows remarkable differences between the scales. An overall description for this diagram seems to indicate a successful achievement of artistic vision. From this feedback the researcher believes that all components of the installation were acceptable to the majority.

The merger between the colours with the duration of the multimedia installation showed a high appreciation by the audiences. However, due to the poor quality

of the sound system which was used in that show, a lower percentage has been given to the sound scale. The researcher noticed that most of the audiences did not hear the sound appropriately because the speakers were not placed in the right places. Generally, an overall impression of the show was that it was appreciated and deemed successful in the majority point of view.

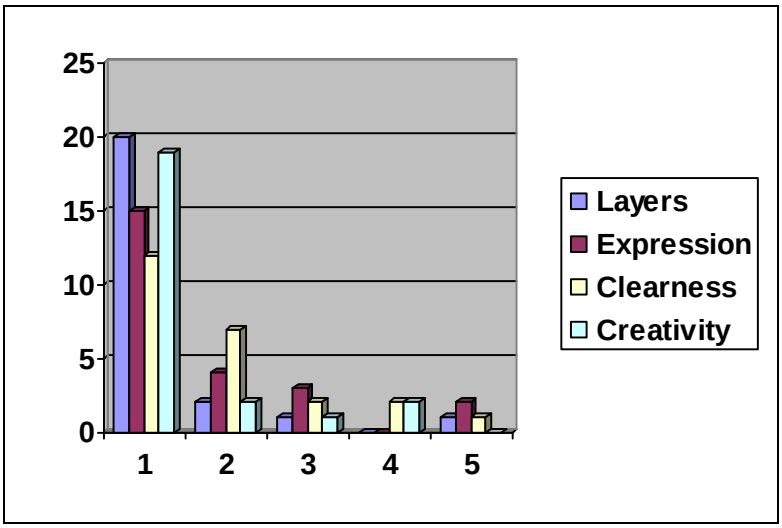

Diagram 6:8

Visual communication

The diagram [6:8] presents the feedback results of the participants in relation to the visual communication of the installation. The journey between the layers was successfully indicated as being an excellent measure of 80 percent of the viewers. However, the percentage scale from the excellent rate to the weak rate is obviously showing a significant decrease. This means that the responses appreciated the new media installation and gave the excellent rating for most of the criteria.

In general, from the Saudi Arabian show the installation overwhelmed the audiences' attention in terms of the new way to present an abstract painting through the use of new tools. Also these high percentages of the viewers' opinions can be regarded in the light of new materials that have been used in the field of visual art in Saudi Arabia.

Finally, viewers in Saudi Arabia are generally fascinated by any new challenges and changes in the field of visual art. This made the researcher's installation a focus of attention. As a new vision to produce and display artwork by computer in Saudi Arabia the researcher's work was greatly admired and opened up lots of questions about this new tool in the field of visual art among Saudi artists. This feedback and these opinions show that Saudi artists are still concentrating on the traditional painting more than digital painting. However, this does not mean that Saudi artists are enclosed in their specific environment rather that they are trying to deny the impact of other cultures on their art production (Fadag, 2006).

6.3. Conversation feedback

In this section the researcher gathered all opinions and concepts from his audiences. The researcher put on lots of individual shows for some artists to gain a deeper feedback regarding his production. These data are collected as notes from his conversations.

The participant artists noticed that movement is essential to this new medium, and they liked the fact that the painting was created by moving a tiny camera between the layers of the paintings. They enjoyed watching the new perspective of engaging with the viewing mode for abstract painting.

The most significant comments from the audiences were about their excitement regarding the new concept of viewing abstract painting with regard to this medium. Most of them asked if they could wind back the animation again after their initial experiences because they wanted to return to see again the details of the compositions.

These interactions to the installation gave the researcher the confidence that his work had achieved a high level of acceptance by audience: *"I think this work will have a strong impact on visual art in general and on fine art in particular among Saudi artists. It is a kind of a new movement in visual art"*. Wala Bashatah, Contemporary visual Saudi artist (the researcher's notes, 2006).

"This installation illustrated the abstract painting from different angles persuading our imagination to swim between the layers throughout its dimensions and colours". Hana Hajar, Caricaturist and painter, Arab Newspaper (the researcher'snotes,2006).

"This installation reflects the artist's feeling. It is opened up lots of vision and imagination from only one painting. It is great effort". Amani Darwesh, Art lecturer, Education Collage at Saudi Arabia (the researcher's notes, 2006).

"The visual interaction of the show with the diversity and harmony of the speed make a unique atmosphere surrounded by affecting sound". Professor Laila Alam, Art philosopher, Umm Al-Qura University (the researcher's notes, 2006).

"It is amazing, what I have seen is unbelievable. An affluence of colour with a wide imagination. Working with the depth of the artwork gave the installation a special attention. It is a kind of a wonderful artistic explosion to widen our thought of flat painting to unseen depth". Ahmed Alghamdi, science teacher, abstract artist (the researcher's notes, 2006).

"Looking at the moving colours take us into the installation. In each movement I can see a unique painting in its own. I normally stand in front of any painting for a few seconds enjoying the colour mixture and the idea behind the surface. But with this installation I found more enjoyment and could stay longer". Abdulmanan Jambi, Art teacher (the researcher's notes, 2006).

"It is new in Saudi Arabia to see something like this. As we are living in the digital revolution, this type of artwork is a real transforming which both artist and spectator need. It is dealing with the eyes, ears and emotions whereas flat

painting just concentrates on the surface of the painting". Najla Alghofilay, teacher and abstract artist (the researcher's notes, 2006).

6.4. Researcher comments

Mr. John Burns, director of studies of this research, interviewed the researcher (Mr. Hesham Maghrabi) to find out his thoughts and ideas towards his art work production.

JB. *How has the use of new technologies within your project affected the way you think about your paintings in creative and technical terms?*

HM. I used the technology to gain more understanding of painting and I used a little camera to look at the layers. New technology assisted me to create painting and its layers. It is like creating a new vision in making paintings, which provided me with a better understanding of abstract paintings. Thus, new paintings are affected by the new possibilities of the technology, however, technology does not affect my work nor my thoughts about future work.

JB. *Do you put things together into the layers before animation*?

HM. No, I still thought about the painting as creation before this new technology. I did not put hidden things inside painting. In my opinion, painting itself is seen as finished work as a kind of new visual artwork without reworking from inside.

JB. *Did you use varnish technique in your painting to create space between layers?*

HM. No. I used acrylic colours and painted over dry surface to create depth between layers.

JB. *The technique allows the introduction of varnish as in oil paint to an acrylic painting?*

HM. Maybe, in acrylic painting depth is controlled or suggested by colours. Sometimes in oil painting the depth is true but small due to its varnish layering. This technique allows manipulation of the depth.

JB. *What is the difference in your animation from layered artwork in film and video?*

HM. In my artwork I used real objects or depictions, my animations are from paintings that existed first. To attract my point of view towards the point of interest within the painting.

JB. *How do other artists from different fields interpret your artwork?*

HM. Sometimes a small part of a painting holds great interest, in my production I wish to guide the viewer's eye to a specific part of the painting. Previously, I carried this technique by cutting the canvas of the painting and showing the fragments separately.

JB. *Layering is everywhere in digital art, what is it that makes your use of layers different or unique?*

HM. Brushstrokes, scramble, collage project art for the picture plane into the real world (relief in general) are facets of my work. Shadow under brush strokes etc. Some are matte and some are gloss.

JB. *How would these elements come across in the digital animation?*

HM. They are lost. Even when we see it on screen they are lost. Certainly when we use digital painting there will be no relief at all.

JB. *Is this going to be an issue when you create paintings whose surface relate to the lighting of the space that they are viewed in?*

HM. Yes, appreciation of surface qualities within my painting is very important.

JB. *Do you think the animation can help to depict the layers of pigment etc. in the surface of your painting?*

HM. Yes, animation shows real scenes of pigment application in motion.

JB. *Do you feel that the re-creation of the surface qualities behind the picture plane of the animation screen is possible via this technique and that it can counter the flattering qualities of scanning handmade images into the digital realm?*

HM. Yes, but we will lose the reflection and shadowing of the light on the surface. This light is the same light that is falling on the viewers. When the picture is reconstructed behind the picture plane new virtual lights will illuminate it and cast shadows.

JB. *Do you feel that the work that you have done addresses the concern about mechanical reproduction as expressed by people such as Walter Benjamin?*

HM. Yes, initially the use of technology was just to move light colours etc. This animation I have created is more complex aiming to keep or to enhance the aura of the digitized or photographed work by allowing new immersion and exploration possibilities.

6.5. General comments

In this section the researcher presents the feedback regarding his production from the viewers in Saudi Arabia. It is a collection of general comments which helped to assist the researcher in his creation process. Also these comments were regarded as viewers' true opinions.

General Manager of Global Skills development company, Sharif Mahmoud, says (2006): "*any work of art that draws your attention, it deserves exploration and to be read. I think your work of art has this characteristic"* (from the researcher's notes).

A flight engineer and abstract painter, Mohamed Alghamdi, (2006) believed that any new ideas need time to be accepted by the audience. Computer art is almost new in Saudi Arabia which means that the large number of the Saudis' audiences will take more time to understand this tool: "*I am learning from nature, with traditional materials there is an emotional connection between your*

hand and the colour, which is missed with the computer, but with your work I can find the colour and the sensation" (from the researcher's notes).

Saudi Arabian abstract artist and teacher, Ahmed Hussain says (2005): *"although it is a flat screen it has a dimension. Your technique is different from other Saudi computer artists. This makes your art production more valuable. I cannot replace my brushes and easel by a screen or a mouse; I do not know how to deal with it"* (from the researcher's notes).

The researcher noticed that when he exhibited his installation in Saudi Arabia Mr. Hussain was among his audiences. After one minute from the starting point Mr. Hussain started to say *"Oh, no way"*. He could not believe that the installation had been done by the researcher. He continued by saying: *"could you rewind this part of a bit, it is amazing, the mixture of the colours with the moving camera made a great impact on my vision"* (from the researcher's notes).

The researcher felt growing confidence and became more comfortable with his show. But Mr. Hussain stood in the middle of the gallery and moved from one angle to another concentrating on the projected screen. He tried to explore the hidden idea behind the animation which was one of the researcher's desires.

A pioneer contemporary Saudi Arabian abstract artist, Yusuf Jaha, says (2006): *"art is not just colour; it is feeling, emotion and interaction. This is what I felt when I saw your installation. There is feeling and emotion"* (from the researcher's notes).

6.6. Summary

This chapter contains an evaluation of the installation which was produced by the researcher. The evaluation was made through stages and each step has its own effect on the development of the creative process.

The first show of the researcher's installation was appreciated by the majority. The viewers understood this kind of installation as a new form of vision to perceive abstract painting. The viewers considered the researcher's production as a new achievement of breaking the limitation of abstract painting. The researcher's ambition crossed the boundaries of the traditional flat surface.

This installation offers the viewers an opportunity to enhance their vision for viewing abstract painting using new technology. Thus, the researcher was concerned about the quality of the artwork production which led him to use this methodology of gathering feedback and opinions.

Moreover, the random selection of the participants for the data collection gave the research direct impact. The researcher considered all opinions to be highly important and adjusted and manipulated the quality of his production according to their comments and suggestions.

The results of the evaluation of this research indicate that the artwork produced positively engaged the viewers in exploring the hidden idea underneath the moving layers. This led the viewers to have a clear vision about the researcher's thoughts and the idea behind his creative artwork.

In addition, the exhibition of three dimensional animations in Saudi Arabia was limited and this research, according to the researcher's investigation, was considered as a unique show. This led the viewers to interact with the show and with the implication of the new technology in the field of visual art. This privilege increased the proportion of the viewers to respond to this installation by providing significant feedback and thoughts.

CHAPTER SEVEN: CONCLUSION

7.1. Introduction

Shifting from conventional materials to new technology is a challenge for both artist and viewer. The artist is trying to manipulate and enhance his/her production whilst the viewers are exploring both the process of production as well as the materials and the message of the artwork. Sreejata Roy (2005) argued that changing from a traditional method of painting to digital technology sometimes causes distress to the artist; on the other hand, the process applied in her own practice was highly appreciated by the artist herself.

Moreover, some artists reject the implications of new technology in their artwork production. They believe that this incorporation between new technology and visual art is a kind of disturbance for visual art as it is missing the handmade values. In contrast, specialist computer artists argue that digital artwork production requires highly developed skills and artistic ability to achieve success with this material.

This chapter includes a discussion of the conclusion from the research and investigation undertaken. It also states the researcher's thoughts about future development of this research. Moreover, the contribution to the relative field of

knowledge is indicated. An overview of the creative production process and the findings then follow. Finally, the conclusion of the research is included.

7.2. Outline of future work

This section includes a discussion of specific areas that could further develop from the thesis. The discussion contains the development of the research from the researcher himself for other researchers interested in related fields.

This research indicated the reasons why some traditional artists shifted their artwork into new and multimedia based installations as a new method for their production. Also this thesis states the process of building 3D abstract new and multimedia installations that were created from flat, abstract painting. The multimedia installation in the research consists of 3 dimensional artworks that are related to the display setting and have some interaction with the viewer.

Often, installation artworks produced are often displayed in non-gallery settings which allow the viewers to experience the artworks more closely. Such types of abstract multimedia installation can be projected onto an open air area and experienced by new audiences in the wider world. The researcher anticipated that this concept could open up future research and may be included in the desired dimension of installation artworks and practice. These further studies will provide a rich area for both the art field and the field of social science.

Also the relationship between the artist and his/her artwork, the displaying and the viewing could provide an interesting point for future research by researchers in the related field. In addition, the researcher believes that further research could be undertaken following on from the final findings in this research. A focus of investigation on the audiences of installations in particular and their interrelation, and interaction with the artwork would be appropriate ground for further examination.

Another way of taking this research forward would be to create a similar process of shifting the flat painting into 3 dimensional environments. In such research other artists' artworks can be included and a researcher could compare the resulting viewers' opinions and feedback to the feedback and suggestions included in this thesis. This comparison may find the differences and similarities to this research that exist in the rapidly developing area of multimedia installation.

The researcher feels that more research needs to be undertaken to provide more details about how new and multimedia installations can be created. This could be an interesting point that other researchers could develop the abstract multimedia installation by showing the sequence of creating the installation step by step. This would be done as an interactive installation responding to the viewer's movement in front of the installation.

With regard to the universities' curriculum in Saudi Arabia this research anticipated that the creation process on the practical production used in this thesis will provide useful elements to be considered in the Higher Education courses. As a lecturer in the art and design department, the researcher considered the implications for abstract painting; new media; multimedia; installation and 3 dimensional, time-based work to be useful resources for Higher Education levels.

The researcher considered that the final production of the abstract new media installation in this thesis could be developed by linking the image to sound. On the other hand, the movement of the images could be controlled by the level of the tone. A loud sound could cause a fast movement to happen to the images whereas a low one could make the images move more slowly. This relationship between music and visual images also can depend on the audiences crossing in front of the projected installation as recorded via sensor-based equipment.

Finally, the researcher proposes to carry out another research project of the new media installation in the near future. This investigation will provide further corroborative insights into the practice of art and the developing of the relationship, between the artwork and the audiences.

7.3. Contributions to the knowledge

Working digitally is not a new scheme in the field of visual art. Many artists have merged computer elements in their artwork productions. However, the new ground covered in this thesis is the process followed to create that work of art. Thus, the process differs in the sequence of using technology-based tools, the degree of integrating technology and the intersection between the tools themselves. Moreover, the environment of art production is extremely interested in the process of making, nowadays, and some artists are distinguished from others by the methods they follow. The variety of process used made it more difficult and complicated to verify the methods that were applied by simply looking at a finished artwork.

The technology as used has given the researcher an opportunity to experience a new kind of idea and thought, which enabled him to experiment within a community. This new technology offered the researcher a new way to perceive abstract painting and brought the hidden layers and process of the researcher's artwork to visibility. The researcher, and audiences, also engaged with the relationship between the picture planes, layers and ground of paintings whilst providing new transport for the viewpoint, field of view, alignment and configuration.

The compiled research will contribute to knowledge in the field of abstract painting and abstract multimedia installation in the following ways:

- Using new technology as a creative tool, together with: oil colour, canvas, brushes and such, to enable artists to gain new insights into creative art practice and provide audiences with new experiences of multimedia installation.

- Also this research showed the development of the process of animation from 2D abstract painting to a 3D environment, which can provide the audience with a greater understanding of abstract painting including the changing of configuration of viewpoint, image plane and pigment areas across time.

- The implication of new media, multimedia and multi-dimensional aspects of installation art with regard to the shifting of 2 dimensions within 3D spaces are processes of animation that can function as useful educational resources.

- Advancing the creative process of abstract new media and multimedia installation. Specifically, the research contributes to such processes in the following respects:

Firstly, the abstract artwork was painted initially as a 2D painting on a flat surface and then restructured into a 3D environment. Thus, the process exploits 2D abstract painting as a texture and environmental element within 3D worlds.

Secondly, the creation method provides a form of animation, which depends on the camera movements in the 3D environment to involve the audience within the layers that lie behind the final piece of work. Thus, it provides the audience with a greater understanding of abstract painting.

Thirdly, the project uses sound as a supporting tool to enhance the audience involvement as a part of the installation. This sound element is considered as an abstract, but related, tone to engage the audience with the artwork and pays tribute to the work of the artist whose practice has engaged with sound and vision.

7.4. Conclusion

This section of the thesis contains the overall aims and objectives of the research. Also it covers the main findings that the researcher achieved throughout his investigation. As the researcher is an abstract artist, all the artworks produced were considered from the visual art perspective.

The main aim of this research was to create an abstract new media installation. This aim involves dealing with the non-tactile interaction between the work of art and the audiences' responses. The researcher is more fascinated by the creation process of his installation than the final appearance of the multimedia installation. To achieve this desired set of objectives were included as follows: to exploit the possibilities of new technology for producing abstract art; to produce an abstract multimedia installation artwork. Finally, to evaluate spectators' reactions and experiences of new media art in general and the researcher's artwork in particular.

The main significant point of this research is to stimulate interest in digital abstract painting and animation. By asking the audience to re-look at abstract painting in a new way, the researcher addressed a series of issues around ideas of new technology, abstract movement and integration of audience with the work of art. Moreover, the initial concern remains the exploration of the conjunction of theory and practice in abstract new media installation work, through a series of experimentations.

New technologies and equipment are more sophisticated these days, allowing us to see and shape our picture in a short time instead of having to spend a long period making stabs in the dark, hoping one has made the right move. Therefore, it is tempting to believe that new technology can create just about anything one can imagine.

Thus, most of us are apparently surrounded by lots of objects and artistic artefacts designed with the aid of the computer. Most of these artworks were created through digital technology or CGI (computer generated image) that is defined as: any image that is created with the use of a computer processor.

Using a computer in the researcher's production, it becomes a tool to help to express his vision, every bit as much as brushes and easel. It seems that he does not feel he needs to be any more a part of his studio to produce any piece of art. Throughout this material he became able to play, express himself and experiment as easily as he moves a brush across canvas whilst being in different locations with a very portable tool.

This research indicates that with new technology the limitation to abstract painting and its edge frame have been overcome by creating many, interleaved paintings to attract the viewers' eyes and to let them travel over colours and layers without restriction. Thus, new technology has contributed to a new visual language and established its own vocabulary.

Moreover, using animation in digital artwork production increases the interactivity with the viewer by allowing the exploring of the hidden painting layers through tiny camera moves that allow for travel between the layers of the painting. Most of the interactive installation artists researched, used technology to enhance the physical interaction with the artwork, whereas, the researcher

used technology to enhance the invisible communication with the layers of the artwork.

In this research the artwork is based on the interaction between several processes, which work with the principle of permanent alteration, norm and sometimes, accident to build the base for a consistently autonomous new evolving of digital technology variations. In most recent installation artwork researched the attitude towards the production expresses desires to explore the creative process as based on the thoughts, experience and emotions of the artist himself.

Furthermore, this research shows that during the field trip to Saudi Arabia the researcher found that the use of new technology in visual art there is, as yet, quite limited. Saudi artists are using computers in their artwork production to examine this new tool within the field of visual art. Also some other Saudi artists are using computers in their artwork to reproduce their paintings at a basic level and some of them are using simple computer software to enhance the resolution of their scanned or captured images.

In fact, this limitation of producing digital painting in Saudi Arabia led the audiences to actually avoid this kind of exhibition. However, before the completion of this thesis, the researcher found that a young digital artist established the first digital drawing institute in Saudi Arabia. Amal Al Saud

created her online web site teaching digital painting as well as providing individual tutorials. This shows that within three years of starting this research the Saudi digital artists are reframing themselves and taking their first steps in the global community of digital production. There are attempts by some artists to create totally digital abstract painting but this is considered to be at the first stage of digital environment when compared to other artists in the wider global community.

Furthermore, the researcher noticed that the rapid developments in computer drawing software have provided Saudi artists with the developing of their toolsets that have been specifically invented in the search for new forms of artistic expression. Such massive scientific and technological improvements persuade artists to continue apace with artistic practice and allow for the improvement and expansion of creative endeavours in many and various creative fields.

The researcher believes that creating abstract painting by traditional method relies entirely on the artists' senses. The artist paints by use of hand, eyes, smell and 'feel' in terms of being attached to the artwork, to frame his or her inner feelings and express his or her emotions. Whilst a digital artist, relying on the same senses finds that the materials are different from those of the traditional method. Digital artists evoke their skills and thoughts and use the materials of new technology in visual art to address their personal expression to the world

surrounding them in an exciting way with this new method. This requires an engagement with new, sometimes, non tactile tool and medium interactions.

With computer aid, an artist is free to visualize his/her picture and to imagine the final appearance of the painting. It is argued that this kind of digital creation has implications for the commitment and the aesthetics of the artwork with its effort. It is a kind of endless round of visual creation. However, the predicted appearance of traditional painting depends on the experience of the artist and his/er understanding of materials and process. Thus, controlling the whole painting at once and exploring any part of the picture in more detail before displaying in a gallery at a specific site, are possible with new technology and as such, change the relationship between time, process and intention.

The researcher noticed that most of the viewers are more concerned about the creative process of the digital artwork than the final appearance of the picture. Frequently, viewers are asked about the stages of the work and how such works as this are produced by the use of a computer. From his observation of his audiences, the researcher noted that most of the audiences were appreciating the process of the artwork before exploring the artwork itself. The appreciation of the process was a particular consideration before exploring the details of the painting by the viewers even though the painting was not fully completed.

This admiration of the new technology in visual art refers to the control of the production. Some viewers considered that the digital artwork belongs to the machine itself and the artist in the digital production has little or no effect. It is true that artists are controlled by the processes in any medium but those who argue against the use of digital technology are missing the point; the computer is just a tool that the artist controls and is not controlled by. The computer is a tool like any other artistic materials which is controlled at the hands of talented and skilled artist.

Moreover, the researcher assumed that this new technology would help the viewers to understand the medium more deeply; it certainly generates interest in the process involved. It is a kind of redefining of abstract painting in a digital era. Furthermore, the illusion of depth can be created by traditional methods of painting through colour and surface; in contrast, with new technology the illusion of depth is not created. Rather, true spatial depth can be created and explored, albeit in a virtual form. This research concludes that the new technology is reconstructing the colour and surface through the illusion and the actuality of the layer's depth.

This research indicates that the accompanying installation artwork is a new vision to speculate about regarding abstract painting in mechanical production. It moves beyond the limitations of the physical frame of the painting. The researcher created his abstract multimedia installation to project his audience's

attention beyond the boundaries of a flat surface letting them explore beyond these boundaries. Installation art dislodged the barrier between the viewer and the work of art by integrating the characteristics of the physical space into the artwork and made them as one part that cannot be separated from each other. It is assumed that the technology has a significant impact on art production in general and on visual art in particular. This collaboration between art and technology diversified to become a new form of interaction and visualization.

This research clearly shows that this audience's perception of abstract painting has shifted. Some artists include the active engagement of the audience as an important factor in the creative process. There is sometimes even a tendency to make the audience a central part of the artwork. The methods and the degree of integration of the audience vary. Art practice is a very individual process and therefore the number of ways of including the audience in the process of making art is very broad and deep. Nevertheless some artists have taken on methods of user testing close to those used in commercial design and even the terms of ergonomics have appeared in the working process of fine art. This demonstrates that technology is not neutral but always carries with it related methods of thinking, acting and terminology.

This research pointed out that the animated art produced by the researcher is a completed body of work and needs to be seen as one piece that cannot be separated into parts or divided into visions. It is a form of art that requires an

exploration of completed work rather than a gathering of objects and elements. Therefore, the engagement and sense of being intrigued and the subsequent response by the audiences are obvious and clear. Animated installation artwork requires a different, more immediate response to the work of art, whereas, with traditional painting the audiences may have to spend a long time to find the interesting points to explore or investigate. This may be because the audience is impressed or intrigued by the tool used or due to the supporting elements which have added to the installation such as sound and lighting etc.

Installation artists gain feedback and the audiences' opinions in a short span of time; sometimes immediately after the end of show. Installation artists can impact on their audiences by supporting installation with the appropriate effects such as sound, light and such. These interactions between the work of art and the audiences can be observed by the audiences' attention and involvement with the show and how they are responding to the artwork. This level of interaction can be achieved by artists as well as the audiences at the same time. On the other hand, artists should interact with their art work production process by being their own audiences whilst creating the work and adjusting the production until deciding it is ready to be displayed.

This research shows that the animation painting can create the optical illusion of motion and record the creation process to increase the viewers' interactivity through the involvement in the hidden layers of the painting. The level of

engagement depends on the viewers' experience in exploring the structure and ability to move inside the steps or phases of the artwork. Also because the initial thought of using animation was to transfer the 2 dimensional painting from a flat surface into a 3 dimensional environment the artwork produced in this research became even more interesting. Thus, this research shows how 3 dimensional artworks change the perception of the viewer with regard to aesthetics and how simultaneously 3 dimensions can achieve a high level of finesse to express the artist's feeling.

This research indicates that the researcher was trying to digitize his artwork by also applying sound effects to his installation. The researcher integrated the abstract sound to his animation in order to increase the interaction and engagement with the viewers; also sound designed to accentuate colour contrast and movement. Thus, the use of sound as a tool in this research was to modify the audience's perception to be more involved with the installation. This function was not concerned with the quality of the tone but rather focused on the abstract rhythm on the audience's attention.

Nowadays, many artists are trying to add sound to visual art to complement the image by sound or sound by image. However, the researcher mixed both with his painting to increase the invisible interaction and engagement between the viewer and the work of art. By creating this mixture the researcher was able to explore the relationship between sound and colour and how they affected the

viewers' response to the digital artwork. The researcher tried to capture and interpret feelings and emotions letting his viewers enjoy the artwork as an attempt at understanding the deeper feelings of their experience in relation to themes contained within the animation painting.

Like sound, audiences are influenced by light effects on the animation painting which may increase the level of engagement with the work of art. As viewers are changed by their interaction by colour and its hue, the contrast between bright and dark layers can create more interactivity. Moreover, this research controlled the viewers by sound, light and camera. The tiny camera used in the installation takes the viewers inside the work with no angle. The viewers stay in a calm area and the images will rotate and flip for them and they are only required to follow the images and try to hear the colour and see the abstract sound.

In addition, the initial feedback gathered from the audiences in the United Kingdom indicates that this kind of art production is highly appreciated and most of the comments concerned the shifting images from 2D into 3D and how the installation overcame the limitation of looking at abstract painting. Moreover, this research shows that the abstract multimedia installation is not a familiar concept in other countries and the viewers in Saudi Arabia are also fascinated by this kind of production although in a different manner.

List of Figures

Please note that for copyright reasons a number of figures have been removed from this version of the thesis. Please consult the print version in the University Library to see the complete thesis.

Figure 5:9

Hesham Maghrabi

Islamics, 2004

Acrylic on canvas 100X 80 cm

(Photograph by Hesham Maghrabi)

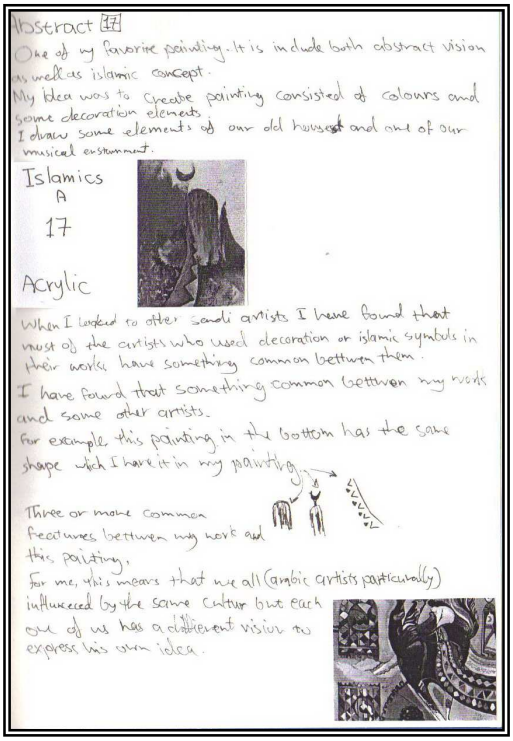
Abstract #7
One of my favorite painting. It is include both abstract vision as well as islamic concept.
My idea was to create painting consisted of colours and some decoration elements.
I draw some elements of our old harvest and one of our musical instrument.
Islamics
A
17
Acrylic
When I looked to other saudi artists I have found that most of the artists who used decoration or islamic symbols in their works have something common between them.
I have found that something common between my works and some other artists.
For example this painting in the bottom has the same shape which I have it in my painting.
Three or more common features between my work and this painting,
For me, this means that we all (arabic artists particularly) influenced by the same culture but each one of us has a different vision to express his own idea.

Figure 5:11

Hesham Maghrabi

Copy from journals 2, 2004

(Photocopy by Hesham Maghrabi)

Figure 5:12

Hesham Maghrabi

Untitled, 2005

Digital painting

100 x 100 cm

Figure 5:13

Hesham Maghrabi

Abstract, 2005

Digital painting

100 x 100 cm

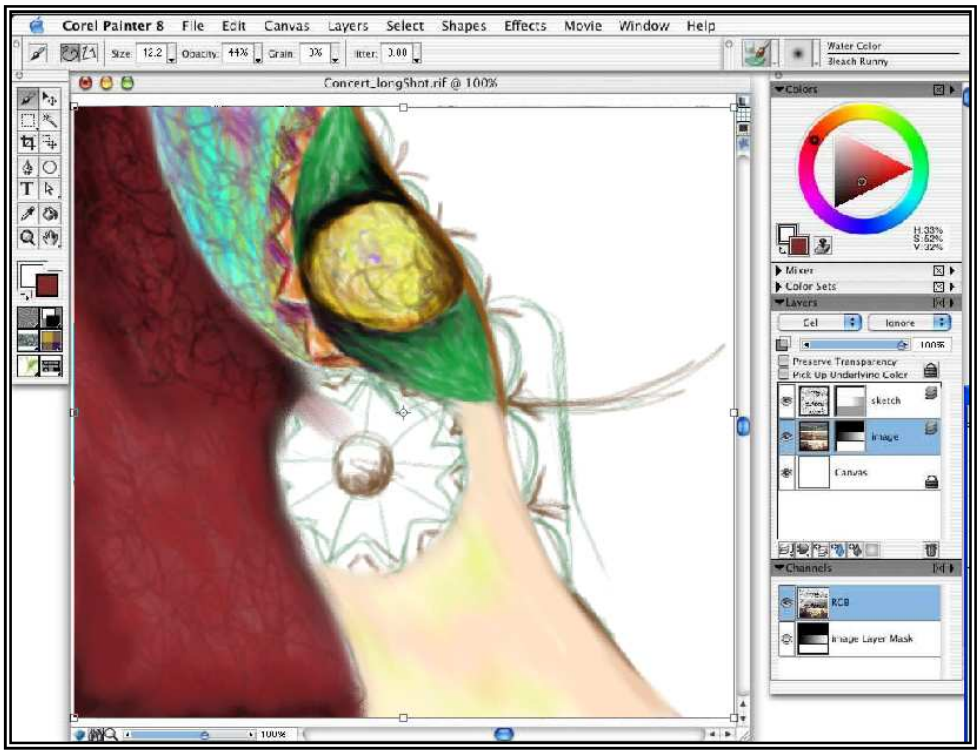

Figure 5:14

Corel Painter 8 Software

(Screen shot by Hesham Maghrabi)

Figure 5:15

Hesham Maghrabi

Projected light on 3D objects, 2004

3D Studio Max

(Screen shot by Hesham Maghrabi)

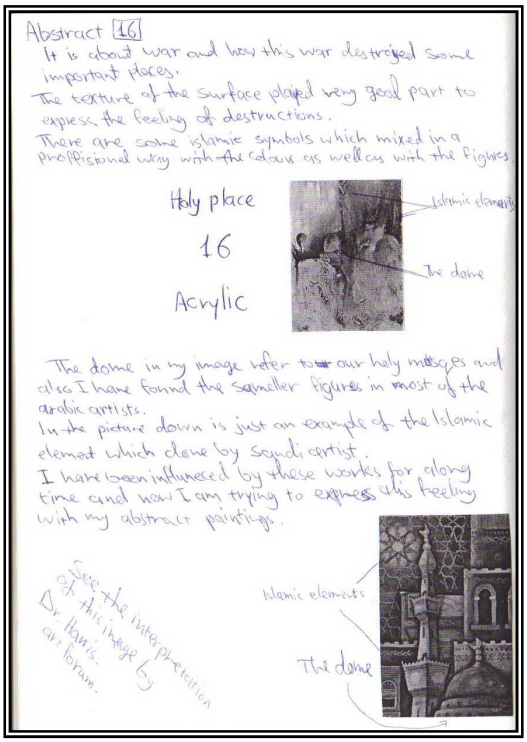

Figure 5:18

Holy Place

Copy from journal 2, 2004

(Photocopy from the researcher's journals)

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Appendix

This appendix contains extra information relating to this research. It includes some text and pictures as well as a DVD as follows:

Appendix A:

This contains the report that the researcher wrote after his field trip to Saudi Arabia to meet Saudi abstract artists. It also covers his trip to Media City in Dubai to collect some information from the designers who are currently working with digital technology and animation materials.

Appendix B:

This contains the interview format that the researcher used during his interviews with the Saudi abstract artists and with the designers in Media City. It also includes examples of four interviews with Saudi abstract artists.

Appendix C:

This contains the reflective journal that the researcher compiled about his personal reflections on his practical production.

Appendix D:

This contains the researcher's questionnaire regarding his abstract new media installation with two examples of completed interviews. This questionnaire was answered by 60 participants in Saudi Arabia, Turkey and the United Kingdom.

Appendix E:

This contains some information about the software which was used in this research.

Appendix F:

This contains some photographs from the researchers' exhibitions.

Appendix G:

This contains an artist's statement by the researcher.

Appendix H:

This contains the researcher's curriculum vitae (CV).

Appendix I:

This contains a DVD which includes the researcher's main abstract new media installation.

Appendix A

Field trip report

My field trip has been divided into three steps. The first step was arranging the appointments with the artists and the designers which enabled me to visit them in their studios. This part of the research was carried out in Saudi Arabia over a period of four weeks. During that time I held 11 interviews with contemporary abstract traditional artists. The main point of these interviews was to discuss their ideas on abstract paintings and more particularly the techniques that they had used in their works. In addition, we discussed some issues regarding colours, materials, textures and surfaces.

Furthermore, 90 per cent of the artists clearly embarked on their paintings without having made sketches or even having a clear idea about the topic of their painting. This method led them to keep exploring the potential particularly of colour during the process of applying it over the canvas. Each artist has a unique style and technique which is in clear contrast to other practitioners. Some artists saw themselves as having discovered their method by accident whereas others reached their goal through painstaking practice. Furthermore, 80 percent of the interviewees agreed that digital art nowadays is a promising new field for them and they would not accept the constraints of the fine art element.

Moreover, I gathered some photographs and digital images of their works as well as some pictures of the artists' studios. These artists used a different kind of

materials to add a particular texture to the surface that made a visual communication between the paintings and the viewers. Some of the disadvantages that I discovered during this period of my research were in regard to the time consuming nature of my interviews. Also most of the artists do not have the time to disclose all the aspects of their techniques.

The second step involved travelling to Media City in Dubai. During this stage my purpose was to meet some designers who were using digital media to produce electronic artworks as well as working with animation. However, because of the commercial nature of many of these undertakings I did not find much of the data that I required . I was not, for example, allowed to meet the designers or the technicians alone and they did not have the right to disclose any information about their business except that which was deemed general information. I visited four companies but without exception all they offered me was basic information about the company and its activity which would have been general knowledge.

The final stage for my field trip was to go back to Saudi Arabia and continue my interviews with specific artists and designers. Because of the lack of specialist designers in the field of digital media it has been something of a struggle to find information relevant to my research. However, I conducted 8 interviews with designers from different nationalities.

In all, I think my trip was successful because I gained lots of information about abstract concepts as well as some information about digital media designers' thoughts and ideas.

Appendix B

Interview Format

Number:	Date: / /
Location:	Age:
Name of the artist:	Gender:
Major:	Starting time:
Education qualification:	Finishing time:

Can you give a brief history of yourself in general? How long have you been practising art?

Which art movement in particular are you following?

Why did you choose this category of your artwork?

Which materials do you often use in your work?

Do you consider yourself an abstract artist?

What does abstract art mean to you?

I noticed during my visit to some galleries in Saudi Arabia that most of the artists are following the abstract movement. How do you interpret this issue?

Where do you normally paint?

Do you like to talk about your technique and the process of your artwork?

How do you paint? I mean do you have sketches or do you paint directly onto the canvas?

Could you tell me the reason why you applied different materials onto your work?

Are you for or against the changing of the artist's material?

Do you like to improve your artistic materials, such as: brushers, colours, easels etc?

Recently, there are some exhibitions around the world showing digital artwork. Have you seen any digital abstract painting?

Can you tell me the first time you saw a digital work of art? And do you like it?

Do you use digital materials in your artwork?

How do you feel when you use your computer to paint?

What is the difference you have noticed between traditional and digital tools?

How you can judge the hand-made value in visual art productions?

Example of interview 1

Number: 13	Date:2004 / 12/ 07
Location: Jeddah	Age: 52
Name of the artist: Mohammed Abdullah	Gender: Male
Major: Flight engineer	Start time:4pm
Education qualification: Bachelor Degree	Finish time:6:30pm

Can you give a brief history of yourself in general? How long have you been practising art?

I am a flight engineer, graduated in the United States. I lived in the United Kingdom for two years and after that I moved to Sweden for another three years. I like to write anything that comes into my mind. I love poetry.

Well, I have been practicing art more than 20 years.

Which art movement in particular are you following?

I like abstract painting and I am currently working between abstract and conceptual art. Modernism attracts my attention; modernism is abstract, in my opinion.

Why did you choose this category for your artwork?

I like anything new and beneficial. I do not like to stick to one thing for a long time.

Which materials do you often use in your work?

I use in my recent work flat and smooth surfaces, such as wood, glass, steel and so on.

Do you consider yourself an abstract artist?

Abstract art now in Saudi Arabia is in the best condition. I prefer abstract painting to other movement because I like any new ideas in art, which has led me to work very hard in this area. I think I became involved in this type of art because I feel comfortable with it.

What does abstract art mean to you?

Um, abstraction is something which refers me to modernisation.

I noticed during my visit to some galleries in Saudi Arabia that most of the artists are following the abstract movement. How do you interpret this issue?

This is true, lots of artists now showing their works, but most of them do not belong in the field of art at all. They are copying others for money on the other hand; other artists are making art as an interpretation of their luxury life. The problem is that the pure and real abstract art has stopped. As an artist you have to be honest with yourself and let your viewers understand your feelings and emotions.

Where do you normally paint?

In my studio. I have my own private studio at home. I feel impelled to visit it every day even I when I am not working on any painting. It is my office, my studio, my life.

Do you like to talk about your technique and the process of your artwork?

Why not? I started my practical art production working in watercolour. But by an accident I found a new technique to treat the surface of the painting. One day I was holding an empty box and filled it with some old materials. I could not close the top of the box because there was a long broken steel stick in the way. After a few days I realised that this is could be an artwork. So I took it and started copying the idea. Now I am involved in 3D objects in my painting coming out of the surface.

Great, this is an interesting issue that I would like to raise here, why are you are doing this? What do 3D objects in your work mean?

I just want to introduce my new ideas. This concept led me to work with sculpture.

How do you paint? I mean do you make sketches or do you paint directly onto the canvas?

Normally I work without sketches. Very occasionally I make them for my abstract painting because it helps me to finish my work and frame my ideas.

Could you tell me the reason why you applied different materials onto your work?

I like to read and I discovered significant information through my reading. I usually explore and experiment with any new materials I find. This helped me to establish my technique and method of painting.

Are you for or against the changing of the artist's material?

Sure I am for this if it will improve the work and add more value to the work of art.

Do you like to improve your artistic materials, such as: brushes, colours, easels etc?

They can be improved but also replaced.

Recently, there are some exhibitions around the world showing digital artwork. Have you seen any digital abstract painting?

I have seen one or two in Saudi Arabia and I have to say I am not overly interested in this kind of art production. I will visit it but preferably I can find out about it. If it is here yes of course I will go and see it but from my previous experience of the show which I saw last year, it is still early for Saudi audiences. to accept such works as a whole exhibition

Can you tell me about the first time you saw a digital work of art?

Last year.

Do you use digital materials in your artwork?

No, and I do not want to do so.

How do you feel when you use your computer to paint?

I use the computer only occasionally and I do so to play with family photographs not for my paintings or art at all.

What is the difference you have noticed between traditional and digital tools?

There is a huge difference between them. There is no feeling with the mechanical production. The aesthetic of the traditional artist comes from his/her hand. In computer production there is no direct contact with the canvas or the colour. The artist's hand is missing. I cannot accept any artwork done by computer. The artistic feeling is missing.

How you can judge the hand-made value in visual art productions?

Any artwork produced by hand is highly appreciated by most people. The value of hand-made productions depends on the both artist's and viewer's experience.

Example of interview 2

Number: 21	Date:2004 / 12/ 20
Location: Jeddah	Age:
Name of the artist: Dr. Abeer Fatani	Gender: Female
Major: Professor Assistant	Start time:7pm
Education qualification: PhD in Craft Art	Finish time:8:45pm

Can you give a brief history of yourself in general? How long have you been practicing art?

I am a professor assistant at Education Collage in Jeddah, Saudi Arabia. My work mainly focus on contemporary art and abstract movement. I work with painting and sculpture. I have been practicing art for more than 15 years.

Which art movement in particular are you following?

I like to try and explore things. But I consider myself within abstract field and even my sculpture refers to abstract and conceptual art movement.

Why did you choose this category to your artwork?

It is reflects my feeling and my reaction towards our world and I like the way that I interpreted my influences and emotions.

Which materials do you often use in your work?

I use everything that I can reach. I used row materials and glass. I like the MDF surface specially when I prepare it by water before I start my painting.

Do you consider yourself an abstract artist?

Well, I can see myself in this area. But some other artists told me my work is belong to somewhere else, however, I like to be considered as an abstract artists.

What does abstract art mean to you?

It is transformation of hug and massive feeling into colours through interaction between my eye and my hand and brain.

I noticed during my visit to some galleries in Saudi Arabia that most of the artists are following abstract movement. How do you interpret this issue?

The number of new artist in Saudi Arabia is increasing every day and this due to the lots of exhibitions running around the year, I like the trend of the people to art direction, even there are some does not related to any kind of art at all.

Do you like to talk about your technique and the process of your artwork?

I think my technique is quite complicate and I do not have any method that I follow because I paint by feeling I do not need to do the same process each time I paint.

Could you tell me the reason why you applied different materials onto your work?

Painting is like telling a story. You need to provide and images and quotes from other to support your narrative. This is exactly what I am trying to do. I used different materials to support my feeling and thought. I think my paintings are missing something which led me to add another materials.

Recently, there are some exhibitions around the world showing digital artwork. Have you seen any digital abstract painting?

I like the idea of adding sound to the artwork. Also the light. They are adding something new to the viewers. These changes give the artist the freedom to express his feeling by any method or technique. This mergence between materials depends on the artist's experiences and how he/she can mix them together.

Can you tell me about the first time you saw a digital work of art?

I did not see anything here in Saudi Arabia except some digital sketches by new artists. I saw lots of digital artists online but not in gallery. I think this the next step for our new generation of young artists.

Do you like this kind of art production?

If it will produce artwork, yes I will like it.

Do you use any digital materials in your artwork?

I only use my computer to check my emails and browse on the internet.

What is the difference you have noticed between traditional and digital tool?

I think the materials different but the goal is the same. However, the artistic feeling is more obvious with the traditional painting. But I like the digital painting you showed me. I thought at the beginning it is hand-made painting.

How you can judge the hand-made value in visual art productions?

Hand-made production is more appreciated in all the world by the large number of viewers. I cannot say digital work is weak or poor. No, digital art has special features you as a viewer has to have knowledge about it. I do not. I think the work by traditional method cannot copy whereas with technology you can produce lots of picture for the same painting with the same quality. You cannot do this with traditional. It is like figure prints and each traditional artists has his/her own brush stroke (finger print).

Appendix C

Reflective journal report

Introduction

A reflective journal is one of the most significant aspects in practice-based research. It is an ongoing record of ideas, thoughts, experiences and reflections on the main topic. It records the concept that we are dealing with and its process. It is like a diary to maintain or adjust the experimentation. It goes beyond the demands of typical written assignments as it promotes the integration of personal thought and expression with my practical research. Journals give a logical means of documenting the learning and collecting of evidence for self-evaluation and reflection. The aim of this report is to explain the process of the achievement regarding my practical work and highlight the development of my creative process.

My personal journal allows me to reflect on my own experiences in the context of a specific idea. I used my journals as a private tutor to record, check and get feedback. It is very useful to keep notes in any area but for practical research this organised diary is particularly significant.

In this report I am going to express some aspects that I have come across. I will talk about my initial interest in creating traditional painting. Also I am going to talk about purpose of creating these abstract images. In the second part of this report I will highlight the significant issues that I have found by using new technology to create abstract painting. Finally I will talk about the most recent practical work that I am involving myself in which is the animation part. In this part I am going to write about the reason why I have done my animation by this way.

Traditional painting

As an abstract expressionist artist, I have the same intention of making abstract paintings by expressing my inner feeling and emotion onto the canvas. Abstract expressionism has been interpreted by Art Cyclopedia as "*a type of art in which the artist expresses himself purely through the use of form and colour*"[1]. It is non-representational, or non-objective, art, which means that there are no actual objects represented. It is beyond understanding in some sense. This gives us some indication of why we are tempted to look for objects in paintings where there aren't any. For this reason it is more of a challenge to create an abstract painting that has meaning. In addition, some viewers directly try to figure out a sensible image in abstract painting. However, when I paint my pictures I am trying to let the viewers enter the world that I have created. Let them relax and use their eyes to leisurely wander over the painting's surface. Let their heart and mind react to its colours, shapes, and textures. Let them be drawn into the illusion of its spaces, the action of its lines, and the mood of its atmosphere. We react emotionally to colour, shape, line and texture elements even if they create no recognizable object for us to hang onto. My main concern is the painting itself which makes me feel free to use my imagination to draw.

I am a non-objective painter, which means I am not attempting to capture the resemblance of nature. I began to explore colour and shape and to paint an entire canvas with my feeling and emotion through my own method. The life energy and my psyche were at once the driving force, the resource and the meaning of my works. The source of my work is my memory that I had been stenographing throughout my entire life. I have been searching for those memories and trying to connect them with the world, my daily life and the world around me. Thus, this is exactly what happens for me when I try to paint any picture. In my opinion abstraction is a reflective more than a communicative act that can be

[1] Author Unknown. 2005. Artcyclopedia. [online]. Available from URL: <http://www.artcyclopedia.com > [Accession 22 May 2005.

expressed through an artist's personal vocabulary. Everyday life and the environment around me have a significant impact on my works.

As a painter, I take liberties with this freedom and play with various materials of paint I choose in either digital or traditional painting, each series being an opportunity to explore visual language in a new path, challenging my skills and stretching my capacity for visual expression.

I integrate colour and hue, pattern and texture, light and dimension by rearranging them into a new relation. In my paintings I try to involve the viewer by drawing them into the layers of my artwork and manipulating their eyes into its depth. I mix the colours so the audience is taken on a journey around the painting. I exert myself to involving the viewer mentally and emotionally with my use of colour. I would like to break the limitation between the image and the viewers' eyes in relation to their visual communication.

In the early stages of my production I made a series of traditional abstract paintings. I painted non-figurative paintings consisting of colour, shape and surface. I do enjoy working with colour more than making any particular figure or involving myself with any other aspect of my picture. My main concern was to create the illusion of depth inside the painting which can be created throughout colour and shape. One significant element of this idea is to let the viewer observe that there are hidden layers beyond these colours. I have reached an appreciable level of depth inside the painting through the mixture of colour. With regard to my method of painting the accidental plays an important role in my artwork because I mix the colour directly onto the surface and also because I paint having made no preliminary sketches.

Through these artworks I am trying to express my feelings and emotions trying to explore the potential of and the secrets behind my paintings. I created the illusion of depth through colours and surface in the process of creating abstract

paintings. I have been creating these handmade paintings for five months as well as carrying out some research about the abstract expressionism movement. The interesting point that I have noticed during work carried out in my studio is that the abstract painting has no imperative of starting or ending the painting. It depends on my level of satisfaction with regard to colour and surface. For example, I like to start my painting from the middle of the canvas. There is no reason for this but I think that in this way I can control the whole image from different angles: "*On the floor I am more at ease. I feel nearer, more a part of the painting, since this way I can walk around it, work from the four sides and literally be in the painting" (Pollock, 1945*[2]*).*

Moreover, it is like invisible communication between my eye and my hand, my feeling and my experience. I am attracted to painting through colours and shapes. I want to find out how different colours will work together or against each other. I try to combine accurate observations with my personal ideas of simplification.

I prefer not to make any sketches before I start my painting. I have started to make small sketches on canvas 7"X5" using acrylic colours. I use Golden brand acrylics because it's the best paint I have come across. Paint is applied using a variety of tools including brushes, knives, sticks, fingers etc. I use various techniques to get a painting started.

The important aspect of these sketches is to keep practising painting and improving my skills as a colourist. Another aspect of this method is to find out how different layers of each painting can affect the way of seeing the image.
Furthermore, I feel that the painting is a part of me and that there is a spiritual connection which makes me move emotionally inside the colours.

[2] Harrison, C and Wood, P. 1992. Art in Theory 1900- 1990 An Anthology of Changing Ideas. Oxford: Blackwell.

My abstract painting expresses the harmony in my feeling of colour and form. Emotion is the soul of my work. The eye can touch an image sensually. I create conjoined colours where there is no separation of one colour from the next. Thus, my work evokes a different emotion depending on the manner of viewing the image.

Computer as a tool

The 20th century has seen a large number of art movements such as Cubism, Futurism, Surrealism, Dadaism, Abstract Expressionism and so on. This change and development has led fascinated artists to think of making improvements in their skills and technique to create a new vision of art. One of these developments is to involve new technology in art in general.

There has been a remarkable growth in experimental art and technology. Some art organizations were formed to facilitate developments, and the number of artists involved multiplied. The organizations promoting such work came from a wide variety of backgrounds, including the visual arts, music, performance and film. The media used in digital art apply to many art forms, including painting, performance, film and participation.

Since I started my studies in the United Kingdom, I have focused on digital art. The new technology gives me freedom in expression and technique. The purpose of using digital painting is to use the computer to create artwork that would otherwise be done using traditional painting materials. The computer in my whole project is a tool like brushes, colour, palette, and so on. I am trying to use it to save time and to see my artwork from different angles which helps me to manipulate any layer I want in a short time.

I paint directly onto the computer, which has helped me to view the creative process as endless. This technique has led me to consider my painting as a unique piece of art. Of course, it also means using a new medium to explore its

potential. I am given the opportunity to view my artwork before it is printed and I can change, manipulate and enhance the colour as part of the creative process. I work directly onto the computer using various painting methods, but I see colour as my primary tool. One of the advantages of using this method is that I can work on each layer separately. With this method I will be able to add or delete any part of the painting without causing any effect on the rest of the image.

My main goal is to create a visual combination of various painting techniques and different approaches to the subject. . In this level I used a powerful application which is Painter 8. I have noticed that this software gives a real sense of handmade paintings. By this I mean that this programme shows the real hue of each pigment as we can see it in real life. I can use the colour palette and mix any colours I want. I felt, in some sense, that I was still using conventional materials. I built up the whole composition on a computer, and then managed the brushwork as I executed the final paintings.

Due to the degree of control possible over my images I subjugated the new technology to my ideas because I wanted to see my paintings before I displayed them on the wall.

I enjoyed working with new technology for several reasons. One reason is the colour palette which is beautiful and consists of millions of colour hues. Also, a work in progress can be stored on disk or transferred via the net to any location for further work. This feature made me feel that it was possible to work from anywhere I like, whereas, traditional painting needs a specific location. Moreover, the freedom of exploration and full control over the whole image or just a detail as required at any stage of the work is one of the important keys in this medium. Above all, I feel expressive when I am drawing and painting with a tablet and my computer.

I have been working with both digital and traditional paintings at the same time trying to explore the differences between them according to the medium. I decided to subjoin an Arabic reference to the hands creating the painting. I added some symbols which refer to the area where I came from. The reason I am using these Islamic symbols is because I want to make reference to my background and also I feel that these symbols are part of my paintings. This desire to make an understandable image has led me to use our own decorative elements. For this reason it is more of a challenge to create an abstract painting that has meaning. All the elements of good representational art should be present, namely colour, form, composition, perspective, etc.

This idea came to my mind after I found that my abstract painting needs something added to it. I have tried to change my colour palette many times and also I have tried a new way to paint but I felt still there was something missing from my work. In relationship with my theory I have noticed that the unconsciousness facilitates how a specific religion may play a more practical role in the work of the abstract artist. Moreover, it is like a spiritual conjunction between my interaction and internal activity of the human body.

Sometimes I print my digital images and start painting over them because the computer does not give me full satisfaction with regard to my painting. I have found this method to be interesting especially when I adjusted or enhanced the colours. I try to capture my feelings in my paintings: the emotions, the spirituality. My belief is that people like creating and enjoying art because it is an attempt to understand the feeling of how and what things really are.

3D Animation

This is the third stage in my practical research which is about creating an animation of my painting. It deals mainly with the layers of the paintings. I am trying to generate a movement of each layer in a different direction as a first step. I became very interested in adding the element of the kinetic to my work. I

like to explore a new moving picture from my still abstract painting. The computer is so many things for so many people. It supports many ways of thinking. One of the things that fascinates me the most about working this way is that you really can approach image making in many ways, simultaneously.

Usually I start with sketches and then work on 3D studio Max software. Some of these sketches I have made in my studio, others I have drawn from my imagination, where I wake up and turn on the light and quickly sketch something. This software is somewhat complicated to use but the result that I have achieved is excellent. I have been working throughout my painting changing the layers and the level of each colour.

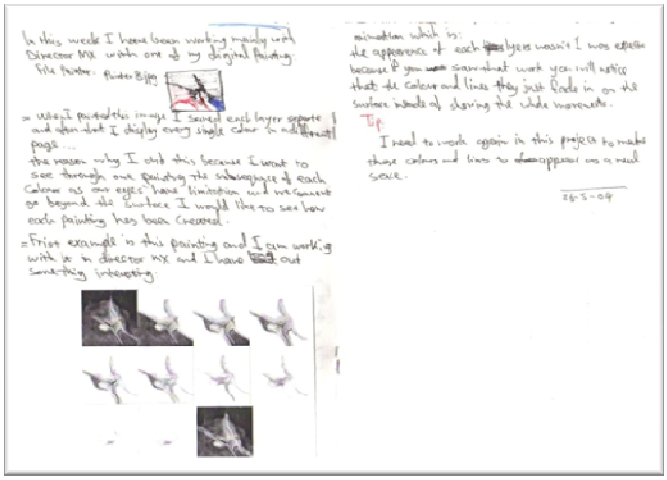
I can examine my image in different ways and by so many options. I captured one sense of my digital painting and I tried to manipulate and repeat some part of it to create a new image. Subsequently, this new picture was imported to the 3D software for the animation level. In this way the screen came up with a totally new vision that I was not expecting at that level. It takes the viewer inside the painting for a journey crossing the layers and the colours. It seems that this level of my production is the best one as I experimented with many ways of taking the viewers' eyes through the picture itself.

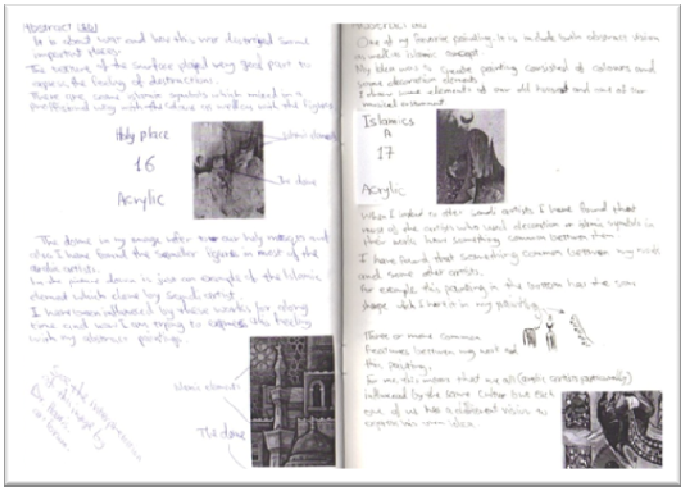
When you look at representational painting, it is easy to recognize what you are looking at. It is easy to identify all the objects in the painting, and sometimes the overall meaning of the painting. However, when you look at an abstract painting, you often have no idea what it is you are actually seeing. Like listening to music, the understanding of abstract art is highly subjective. Each viewer must arrive at her/his own explanation, despite the fact that the artists may have had a very particular, and often very different, meaning in mind.

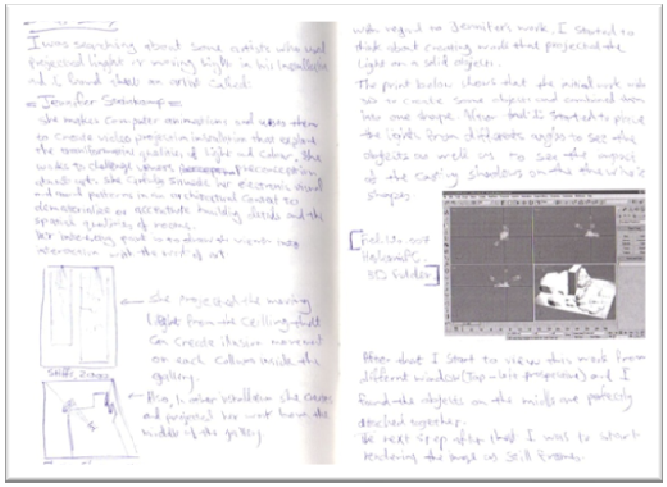
The second step of my animation project was the selection of some part of each layer and the combining of these to create movement. In this experimentation I

did delete some parts of the layer and the opposite parts of another layer and mixed them together again to produce a new animation vision. The main goal of this step was to create the illusion of depth through colour and moving layers.

My intention of making these animations is to project them on the big screen as a loop movie for five minutes. This installation will consist of my abstract paintings that I have animated to come up with a new visual language. The abstract painting has a limitation while it is displayed on the wall directly. However, by creating this new visual vocabulary this installation will break the barrier between the viewer and the artwork.







Copy form the researcher's journal, 2005
Scanned by Hesham Maghrabi

Appendix D

The Application of Traditional Abstract Painting in the New Media Environments

Your valuable feedback in this form will be used to improve and develop my multimed installation artwork. Also to evaluate your reactions and experience of new media art i own work.	
Name :	**Educational qualification :**
Major :	**Date of the show :**

Please answer the following questions; rate the work by marking the answer that reflects your view; 1 indicates excellent and 5 indicates weak.

Criteria	**1**	**2**	**3**	**4**	**5**
1. Technical quality					
a) Chroma (resolution of the images)					
b) The software used fulfil the needs of the artist					
c) Suitable use of techniques					
2. Artistic vision					
a) Appropriateness of the sound					
b) Speed of the show					
c) Duration of the show					
d) Colour intermixture					
e) Appropriateness of the effects					
f) Transition between scenes					
g) Sympathy between the work elements					
3. Visual communication					
a) The journey between the layers					
b) Expression of the artist's emotions and ideas					
c) Clearness of the idea behind the work					
d) Creativity; the work demonstrates effort to explore possibilities for personal expression through digital imaging					

Do you think this digital work is important to the visual art?
No ☐ Yes ☐ (please specify why) ……
Have you seen a similar piece of work to this earlier?
No ☐ Yes ☐ If yes please specify the following : 1- Criteria of similarities : Idea- concept ☐ Content☐ images ☐ other ☐ (please specify) …… 2- The name of the work and the artist? **……..**

Where can this piece of art work exhibited? ..... **How can this piece of work be improved?** .....

Your cooperation to support my research is highly appreciated.

Please don't hesitate to contact the researcher for further comments or enquiries.

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Questionnaire example 1

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Questionnaire example 2

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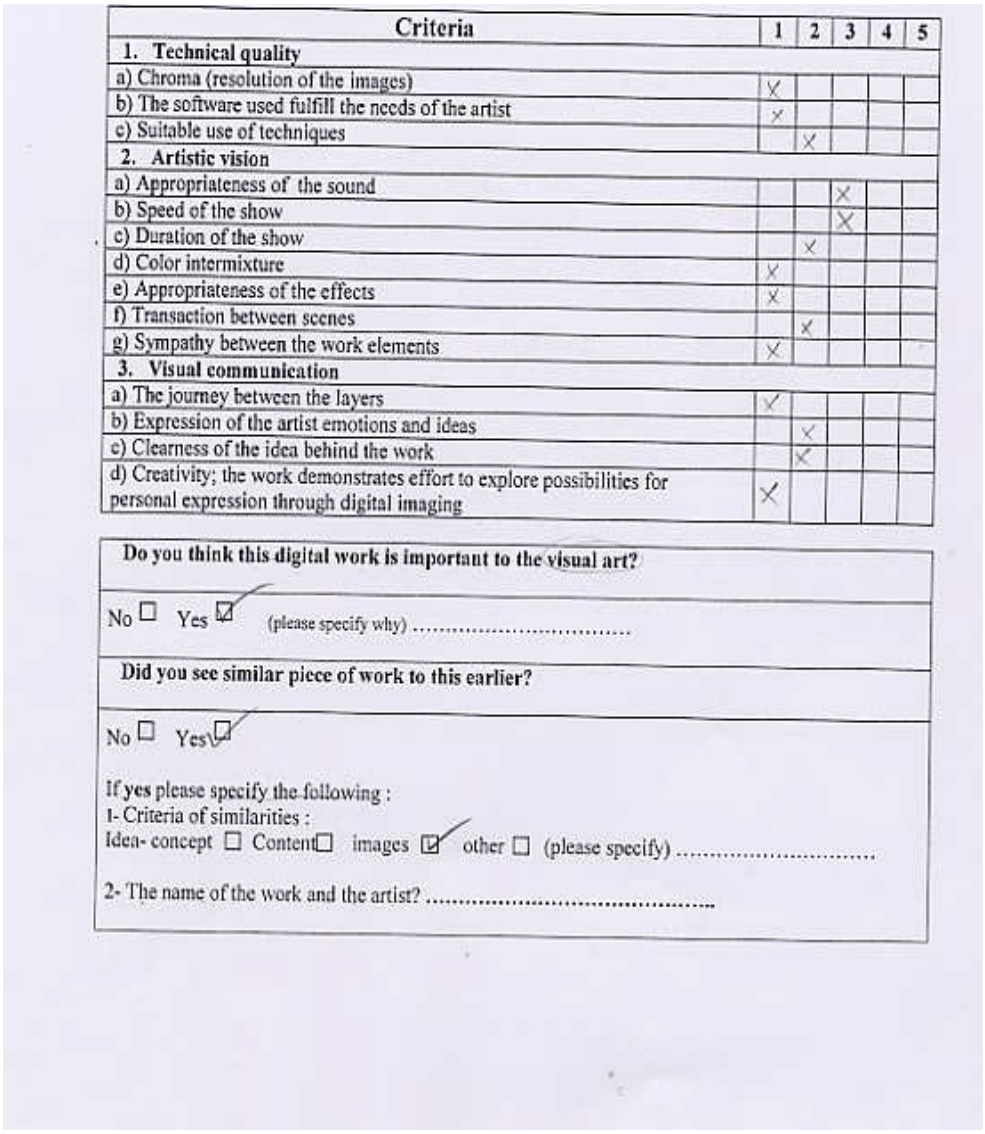

Criteria	1	2	3	4	5
1. Technical quality					
a) Chroma (resolution of the images)	X				
b) The software used fulfill the needs of the artist	X				
c) Suitable use of techniques		X			
2. Artistic vision					
a) Appropriateness of the sound			X		
b) Speed of the show			X		
c) Duration of the show		X			
d) Color intermixture	X				
e) Appropriateness of the effects	X				
f) Transaction between scenes		X			
g) Sympathy between the work elements	X				
3. Visual communication					
a) The journey between the layers	✓				
b) Expression of the artist emotions and ideas		X			
c) Clearness of the idea behind the work		X			
d) Creativity; the work demonstrates effort to explore possibilities for personal expression through digital imaging	X				

Do you think this digital work is important to the visual art?

No ☐ Yes ☑ (please specify why) .....

Did you see similar piece of work to this earlier?

No ☐ Yes ☑

If yes please specify the following :

1- Criteria of similarities :

Idea- concept ☐ Content ☐ images ☑ other ☐ (please specify) .....

2- The name of the work and the artist? .....

Where can this piece of work exhibited?

This piece of work exhibited in any volume.

How can this piece of work improved?

—

Does the animation support the paintings as a new visual language?

Yes, the animation support the paintings as a new visual language.

How do you see the whole installation in general?

I see the whole installation in generally perfect.

Your corporation to support my research is highly appreciated.

Please don't hesitate to contact the researcher for further comments or enquires.

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Appendix E

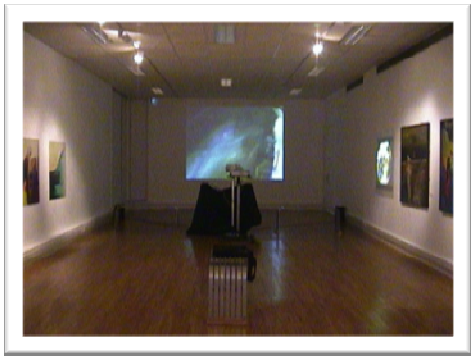
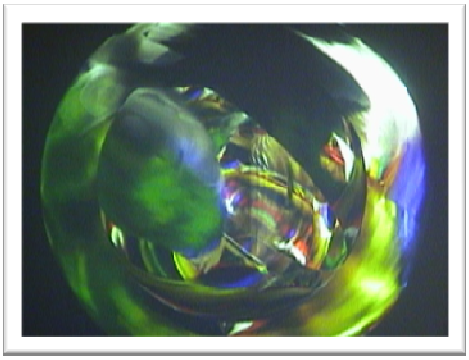
Corel Painter 8		
It is an image creation software which allows you to paint the whole image within the program in its own. It provides all the artistic tool with a specific function. It has an interactive interface with amazing brush creation palette as well as the sketches option which offers the user to transfer the bitmap pictures into sketch. Platform: Win/Mac	File format support	Incl. EPS, PDF, TIFF, JPEG, GIF, PSD, AI
	Range of drawing tools	Full range
	Bitmap editing	Yes, advanced options by assigning an external editor
	Multiple 'undo' levels	Yes
	SVG support	No
	Text on a path	Yes
	Save workspace settings	Yes
	File browser	No
	Rasterise	Yes
	Vectorise/Trace tool	Yes
	Export to Microsoft Office	Yes
	Other	Includes Corel TRACE for vectorising bitmaps

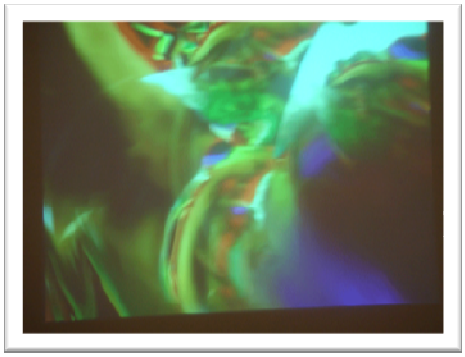
http://www.unleash.com/kurt/painter8/index.asp

Appendix F

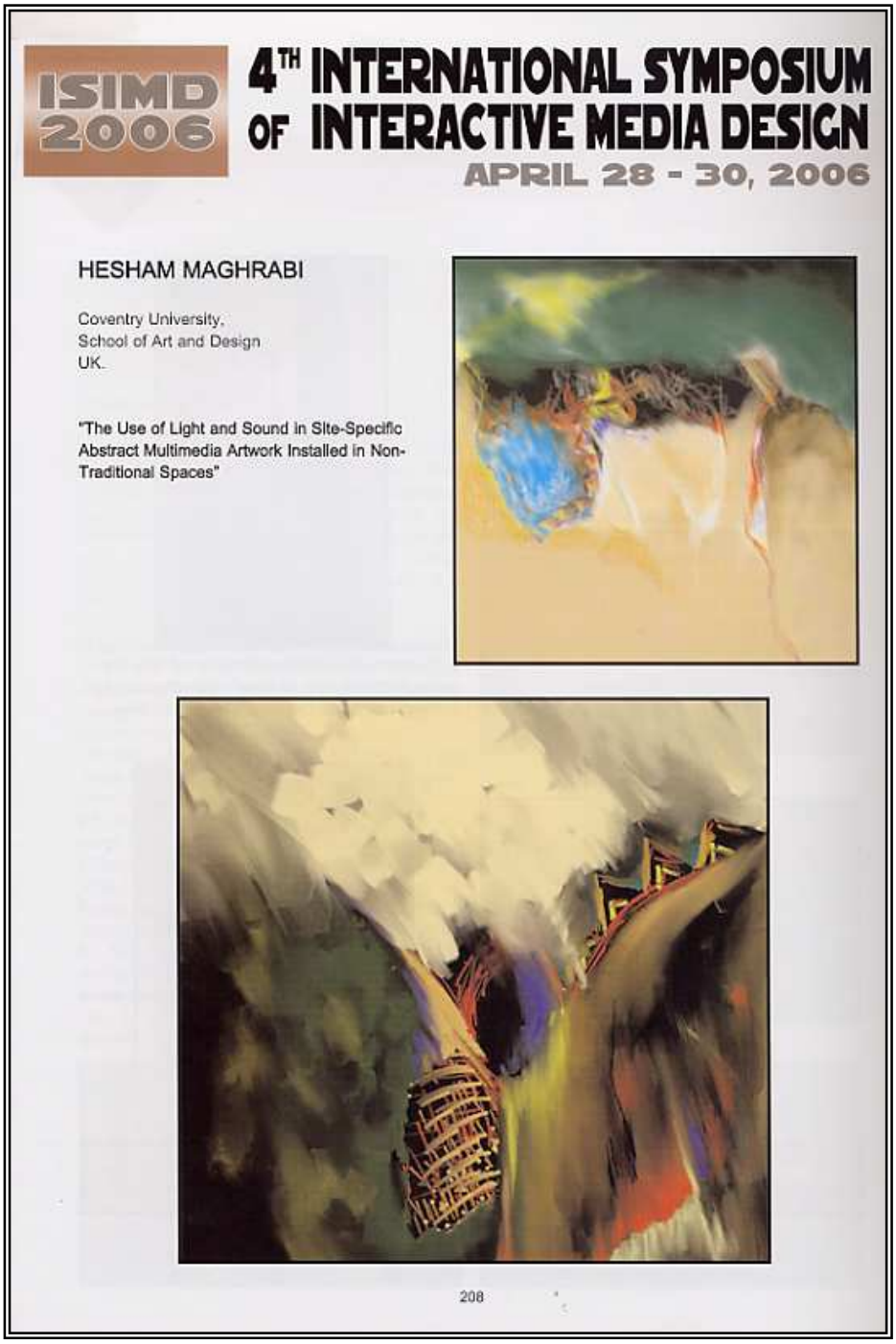
The researcher exhibitions

United Kingdom show
Lanchester Gallery, November 2005
Coventry University
Photograph by Hesham Maghrabi



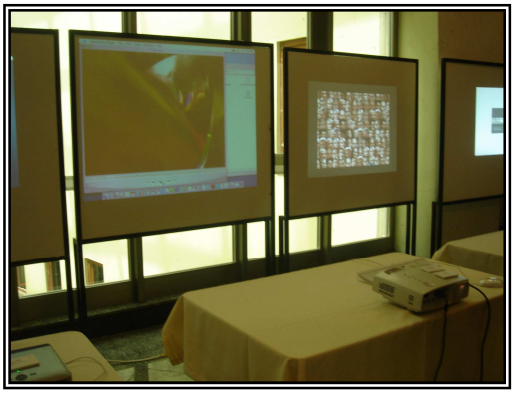

United Kingdom Show, 2005

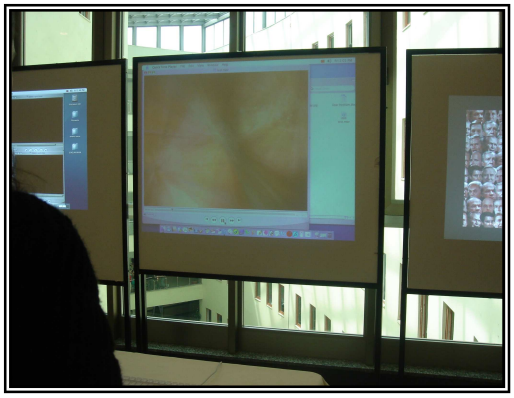


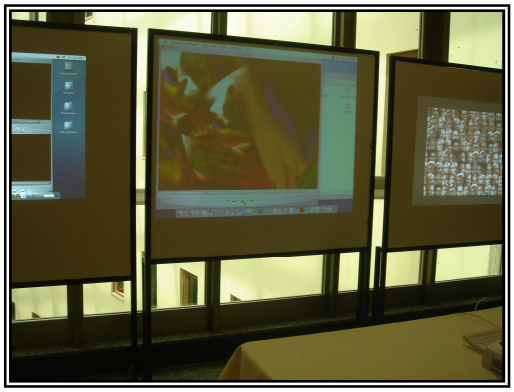
4th INTERNATIONAL SYMPOSIUM OF INTERACTIVE MEDIA DESIGN

Istanbul, Turkey

28 – 30 April 2006







Photographs by Hesham Maghrabi, Turkey 2006

ARTISTS' HOUSE SHOW
Jeddah, Saudi Arabia

12 January 2006
THE FIRST SAUDI INNOVATION CONFERENCE
Newcastle upon Tyne
12 May 2007

Appendix G

Artist's statement

My work is concerned with an Abstract Expressionist concept; the paintings are about influence and the way I feel. I try to make a kind of visual language, letting the spectators understand my work through their own experience and reaction to it. I create a mixture of influences between the hot weather, in the country that I came from, and the British landscape.

I used a computer for my work as a tool which helps me to modify and create new layers over my painting. For me the use of the computer is not the main propose. It is just a form of media. Thus, creating artwork using new technology is extremely challenging. The computer does not save my time because it opens up hundreds of possibilities- and I want to try them all. And sometimes I do.

For me, there is no set order in beginning a painting. Sometimes I start working on a canvas directly, and at other times I start with the digital photographs or scans of real objects. Or I start with a painting which I scan into the computer. The result is a mixture of digital images combined with acrylic and/or oil colour.

Over the last five years, I have been creating an abstract multimedia installation that allows viewers to become a part of the painting through engagement with dynamic colours and various layers. The main object I hope to accomplish in my work is to express my inner feeling by the use of colour, texture and digital media.

Appendix H

The researcher's CV

Hesham A. Maghrabi

Date of birth: 15/12/1973
Nationality: Saudi

Address: 28 Rodyard Way
Parkside
Coventry CV1 2UD
Tel/Fax (+44) 247 6633 626
Mobile (+44) 788 7888 881
www.maghrabi1.com

PO Box: 9517
Makkah
Saudi Arabia
(+966) 2 5420 900
(+966) 5555 03717
maghrabi1@hotmail.com

Education

Undertaken **PhD degree** at Coventry University, Coventry, UK
'The Application of Traditional Abstract Painting in New Media Environments'

Master Degree
2002 MA in Fine Art with merit.
Coventry School of Art and Design, Coventry, UK
'The Impact of Computer on Visual Art'
It is about using the computer in art production as a tool and how the computer has influenced the field of visual arts.

Bachelor Degree
1995 BA in Art Education
First class with distinction.
Umm Al-Qura University, Makkah, Saudi Arabia

Additional relevant experience

I presented my animation projects in some conferences, symposiums, workshops such as:

- Lanchester Gallery
  4- 15 November 2005
  Coventry, UK
- House of Artists
  12 January 2006
  Jeddah, Saudi Arabia
- The 4th International Symposium of Interactive Media Design
  28- 30 April 2006
  Istanbul, Turkey
- The first Saudi Innovation Conference
  12 May 2007
  Newcastle, UK

Work experience

2005 Member of committee panel
Children's drawing Competition
King Fahad Academic
London, UK
1999- 2000 Manager Assistance
Global Skills Development
Part-time
Jeddah, KSA
1995- 1999 Professional Designer
Al Mersam Adv. Ltd
Makkah, KSA
1999 Member of committee admission
Umm Al Qura University
Art Education Department
Makkah, KSA
1999 Practical Training Supervision
Final year students
Umm Al Qura University
Art Education Department, KSA
1998 Teaching Assistance
Umm Al Qura University
Education Collage
Makkah, KSA
1996- 1998 Art Teacher
Abdullah Bin Jaafer
Intermediate School
Jeddah, KSA
1995- 1996 Art Teacher
Al Namouzajyah Al Aula
Primary School
Jeddah, KSA

Professional Membership

Tate Modern Art Gallery.
United Kingdom
Saudi Students Club at Coventry.
Vice-president

Prizes and awards

Appreciation Certificate. Saudi Students Clubs
2007, United Kingdom
Appreciation Certificate. Saudi Cultural Bureau
2006, United Kingdom
Appreciation Certificate. Scholarships and University Relationships Administration
2006, Umm Al-Qura University, Saudi Arabia
Appreciation Certificate. Saudi Students' Schools
2005, United Kingdom
Appreciation Certificate. Birmingham Saudi Student Club
2005, United Kingdom
Appreciation Certificate. Birmingham Saudi Student Club
2004, United Kingdom
Appreciation Plaque. Al-Namouzajyah Primary School
1996, Jeddah, Saudi Arabia
Appreciation Certificate. Al-Namouzajyah Primary School
1996, Jeddah, Saudi Arabia
Appreciation Certificate. Bin Khaldoon Secondary School
1996, Jeddah, Saudi Arabia
Appreciation Certificate. Student's Activities
1995, Umm Al-Qura University, Saudi Arabia
Appreciation Certificate. Al Falah School
1995, Makkah, Saudi Arabia
Distinction Plaque. Umm Al-Qura University
1995, Makkah, Saudi Arabia
Distinction Certificate. Umm Al-Qura University
1995, Makkah, Saudi Arabia

Other relevant qualifications

Diploma, Interior Design
2005 Central Open Collage Network
Coventry, UK
Academic English Language
2001 Nottingham University
Nottingham, UK
General English Language
2000 Sheffield Halam University
Sheffield, UK
Activation Art Teachers' course
1996 Teachers' Collage
Jeddah, Saudi Arabia
Diploma of English Language
Language Incorporated
Virginia State, USA

Participations

The first Saudi Innovation Conference
2007 Newcastle upon Tyne
Newcastle University, United Kingdom

First Prize, Second Competition
2006 House of Art Forum
Jeddah, Saudi Arabia

Abstract Multimedia Installation Exhibition (solo)
2005 Lanchester Gallery
Coventry University, United Kingdom

First Prize, First Competition
2005 House of Art Forum
Jeddah, Saudi Arabia

Exhibition of House of Art
2005 Royal Art Theater
Marrakech, Morocco

Exhibition of House of Art
2004 House of Art Forum
Riyadh, Saudi Arabia

First Arabic Electronic Exhibition
2004 House of Art Forum
Online Exhibition

First Hejazyiat Exhibition
2004 Al Hejaz Mall
Makkah, Saudi Arabia

Square, Solo Exhibition
2002 The Glass House
Coventry, United Kingdom

MA Exhibition
2002 Lanchester Gallery
Coventry, United Kingdom

Al Hejaz Mall Exhibition
2000 Al Hejaz Mall
Makkah, Saudi Arabia

Traditional Life Style Exhibition
1998 Artists' House
Jeddah, Saudi Arabia

First Artists' House Exhibition
1998 Saudi artist
Alexandria, Egypt

The 59 Artist Exhibition
1998 Artists' House
Jeddah, Saudi Arabia

Exhibition of Contemporary Art
1997 Artists' House
Jeddah, Saudi Arabia

Ministry of Education Exhibition
1996 Jeddah, Saudi Arabia
Third Exhibition of Artists' House
1996 Artists' House
Jeddah, Saudi Arabia
Competition of Umm Al-Qura University
1995 Umm Al-Qura University
Makkah, Saudi Arabia
Umm Al-Qura University Exhibition
1994 Umm Al-Qura University
Makkah, Saudi Arabia

Appendix I

DVD

This contains the researcher's main abstract new media installation.